

-
FIG.

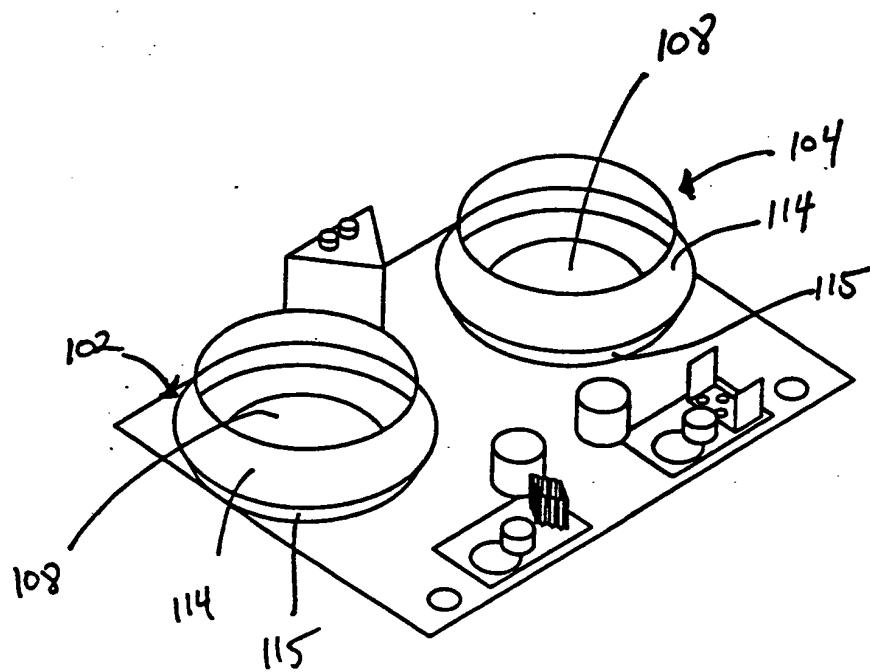


FIG. 2

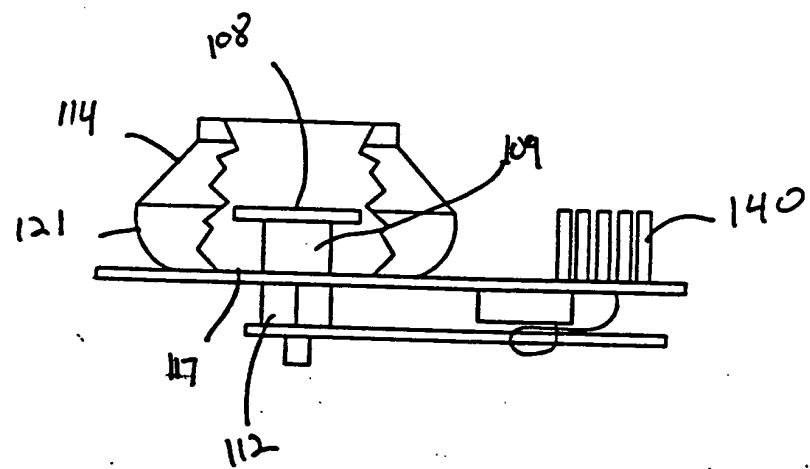


FIG. 3

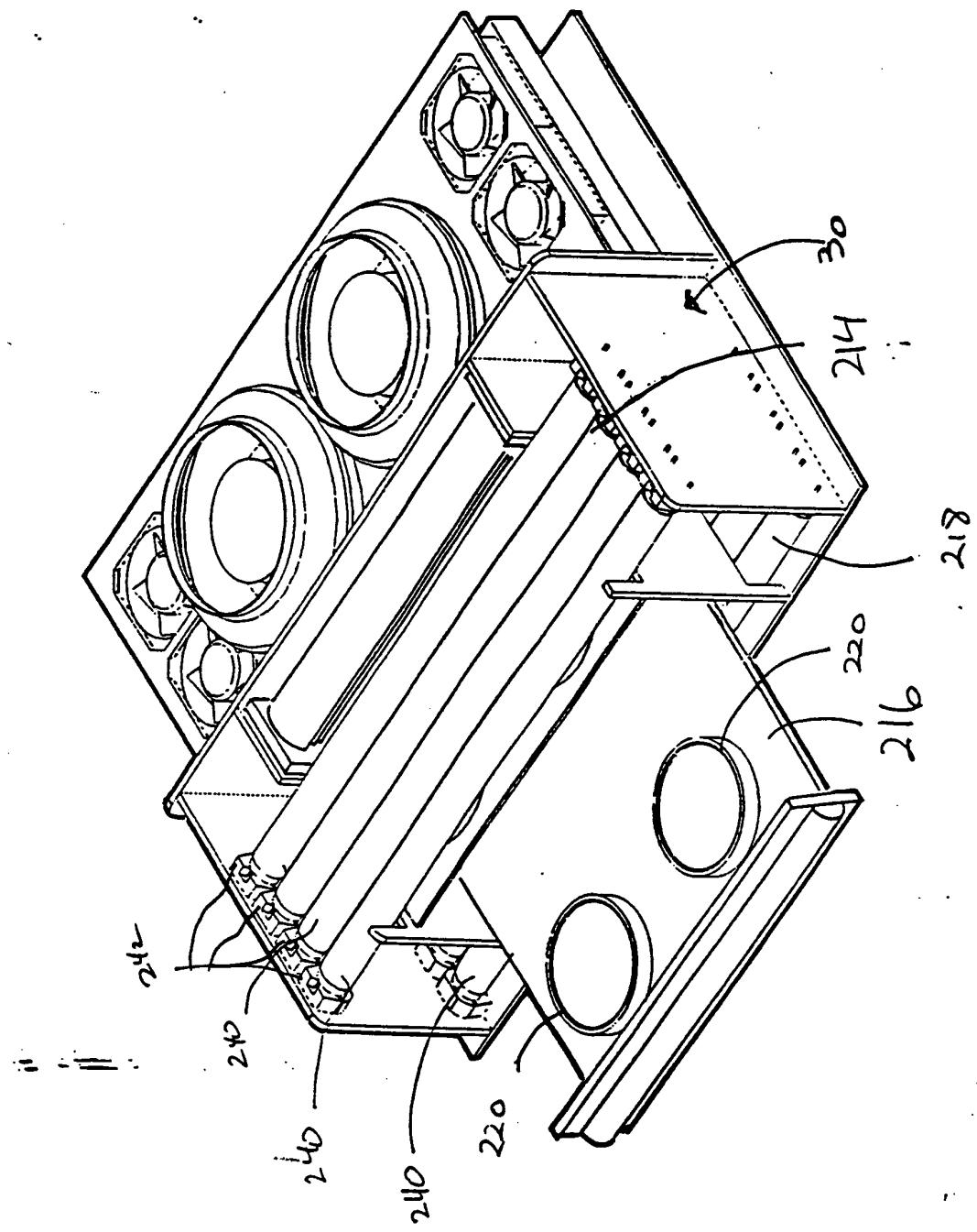


FIG. 4

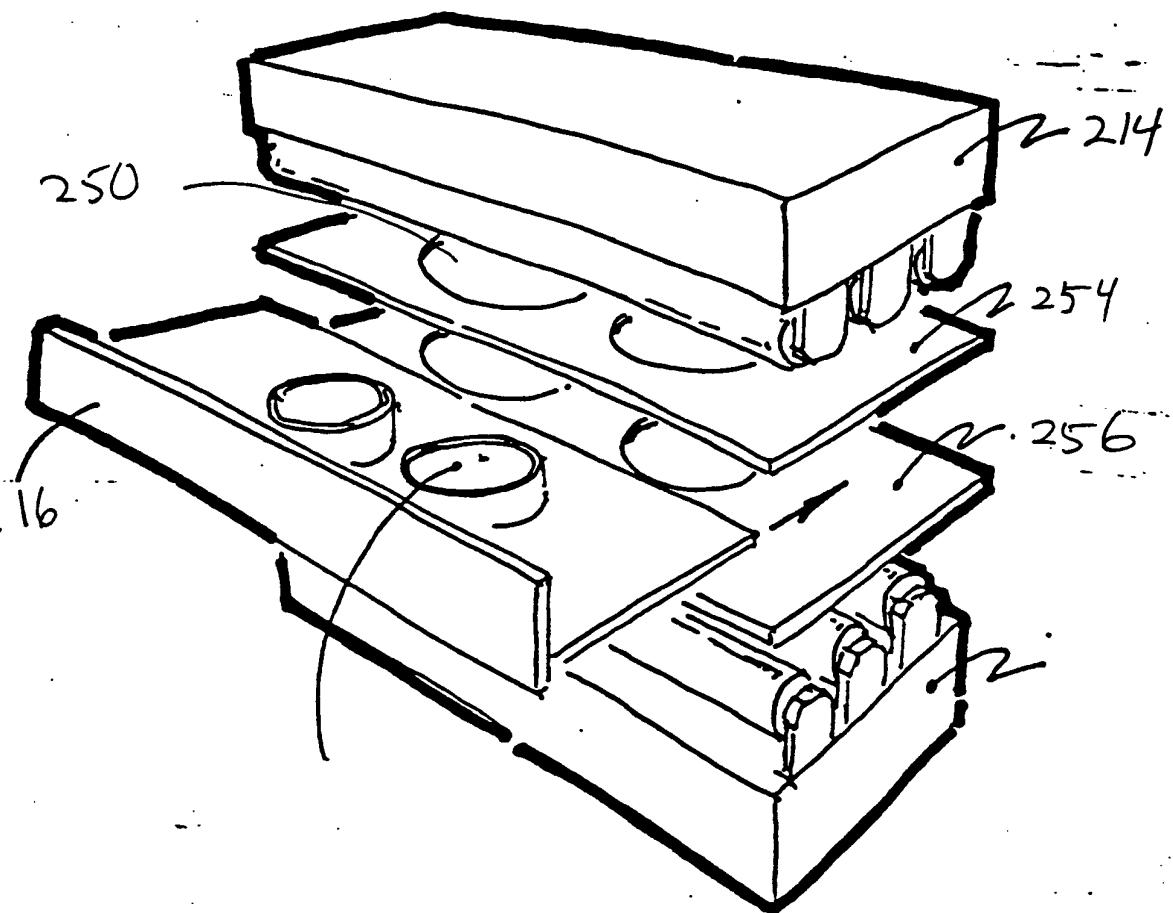


FIG. 5

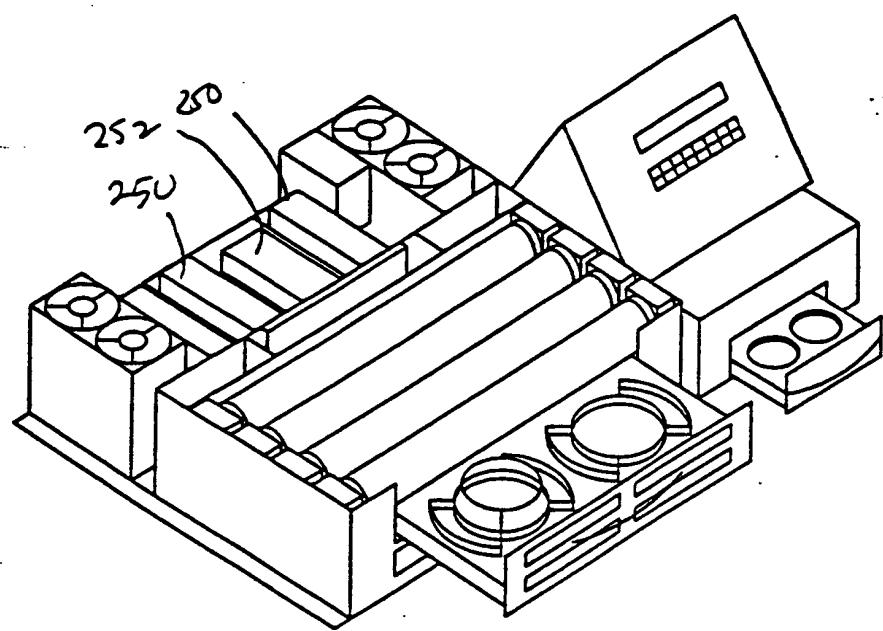
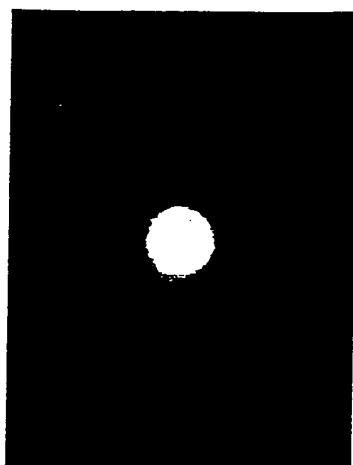
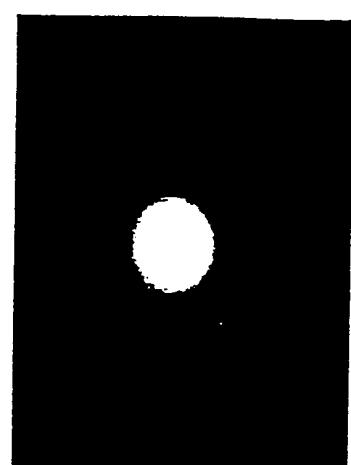


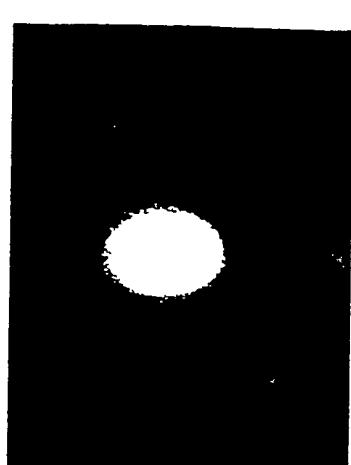
FIG. 6



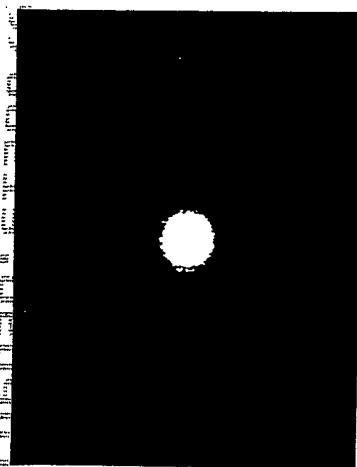
A



B



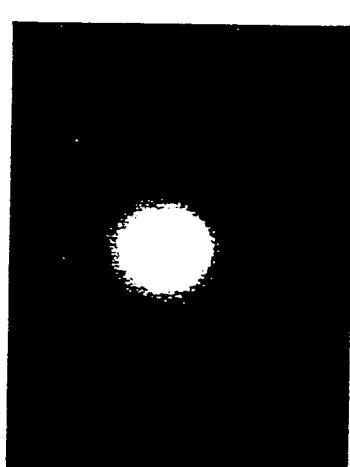
C



D



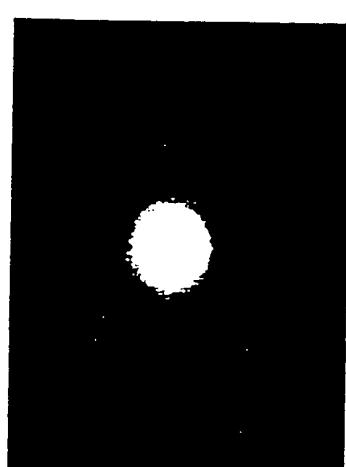
E



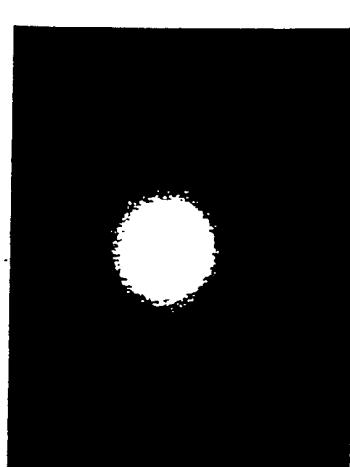
F



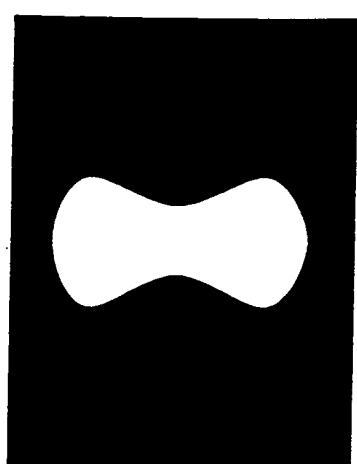
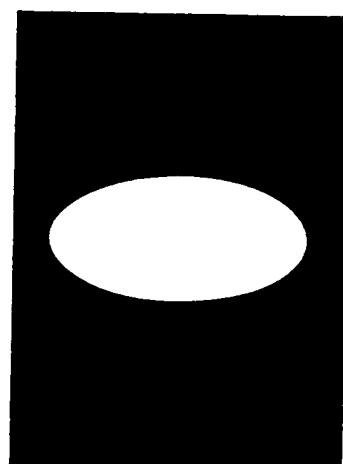
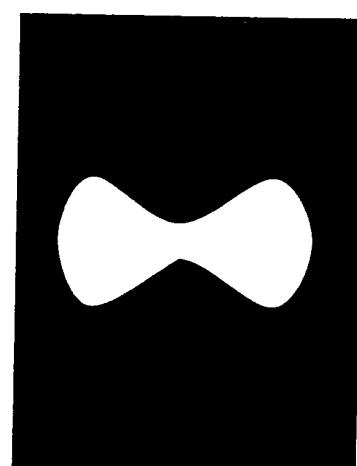
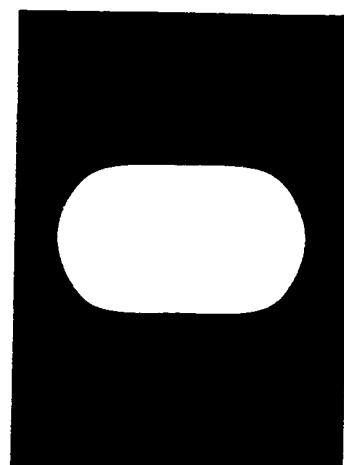
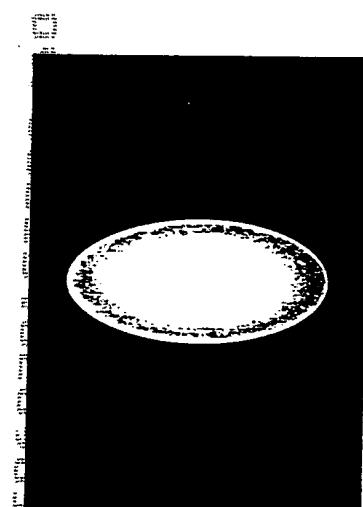
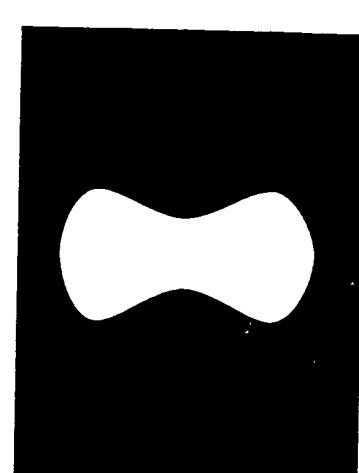
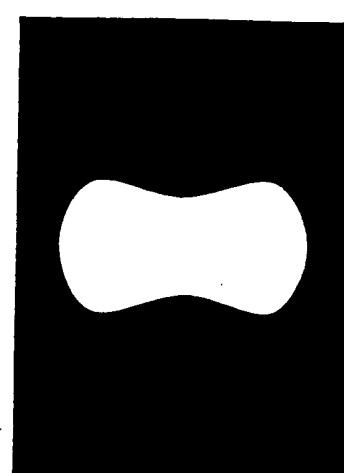
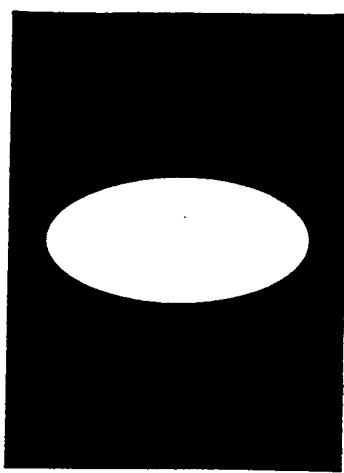
G

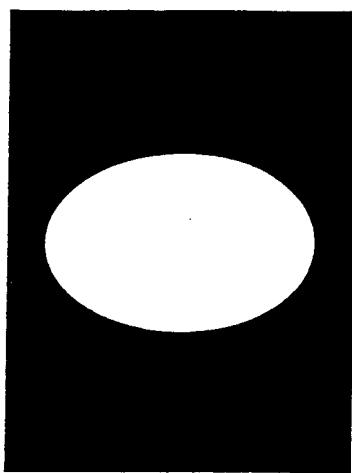


— — H



I

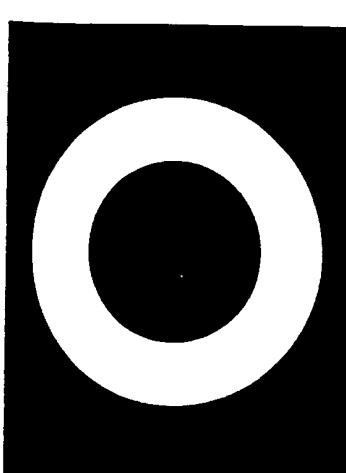




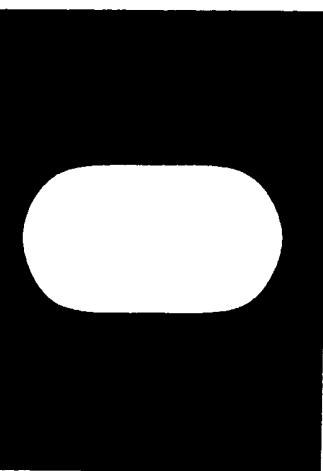
A



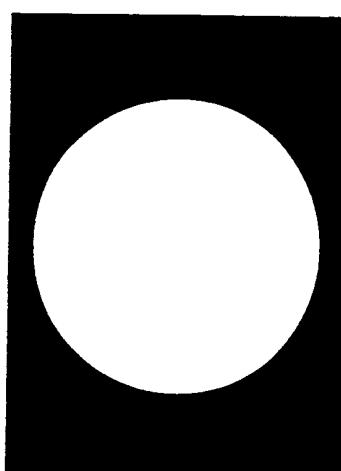
B



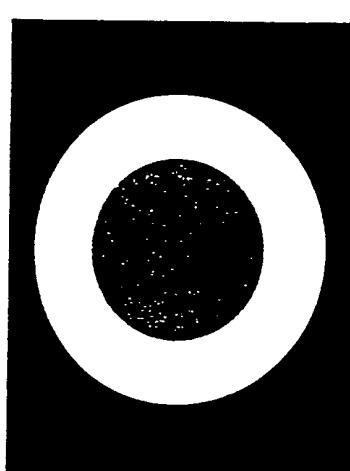
C



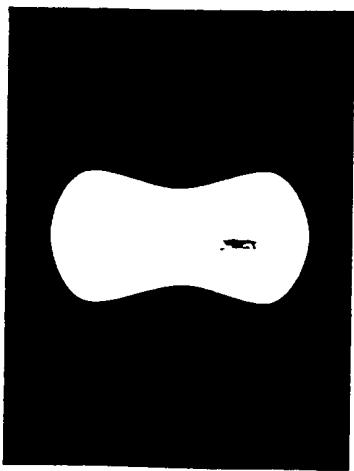
D



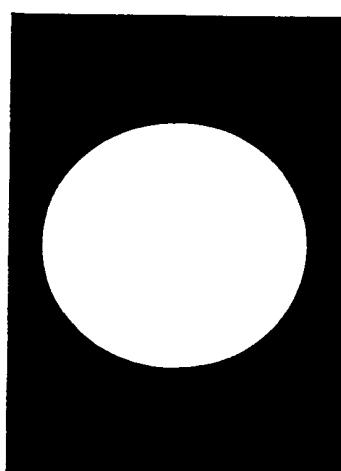
E



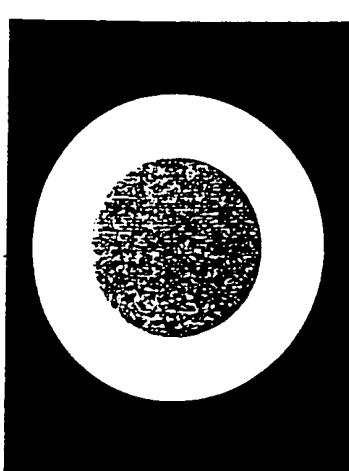
F



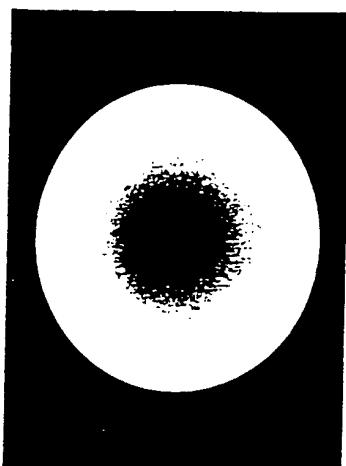
G



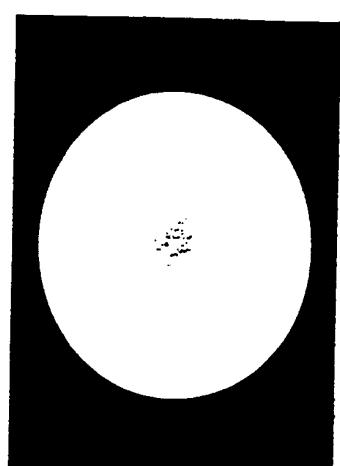
H



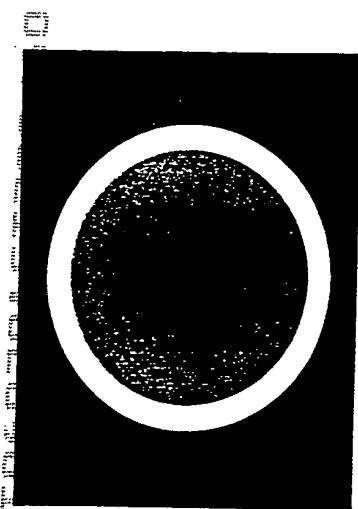
I



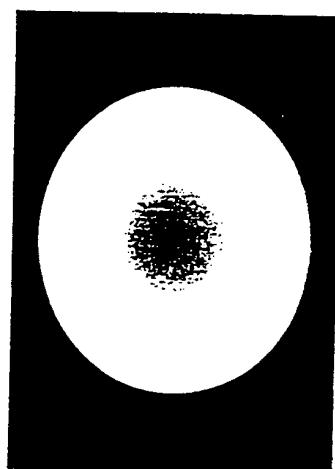
A



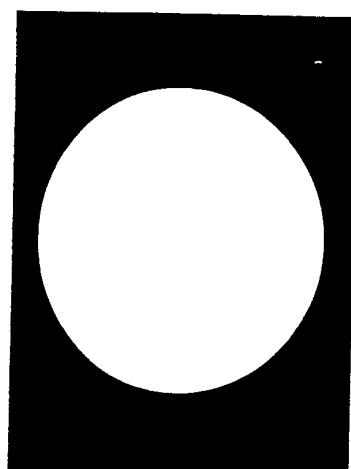
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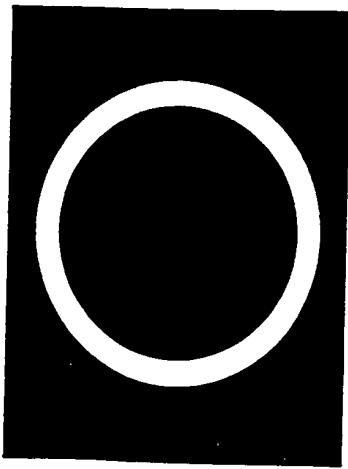
D



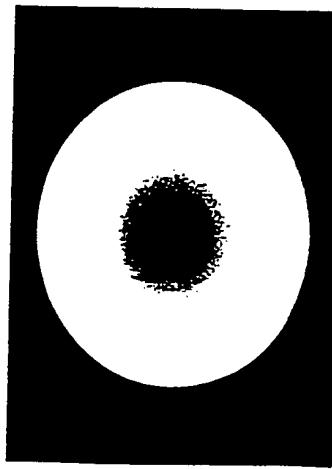
E



F



G



H

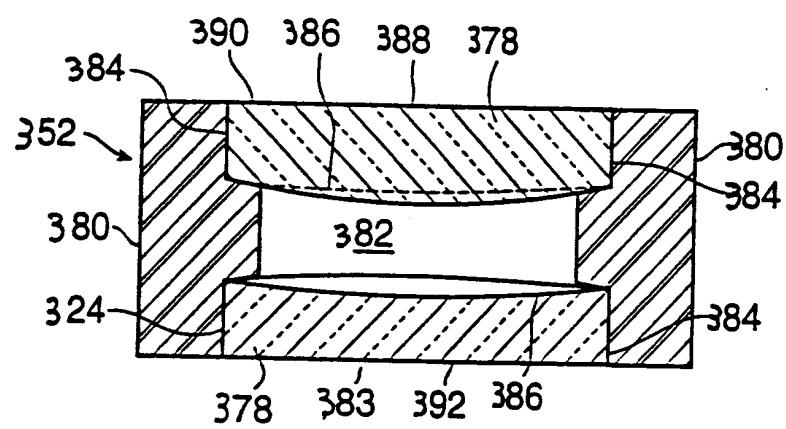


FIG. 11

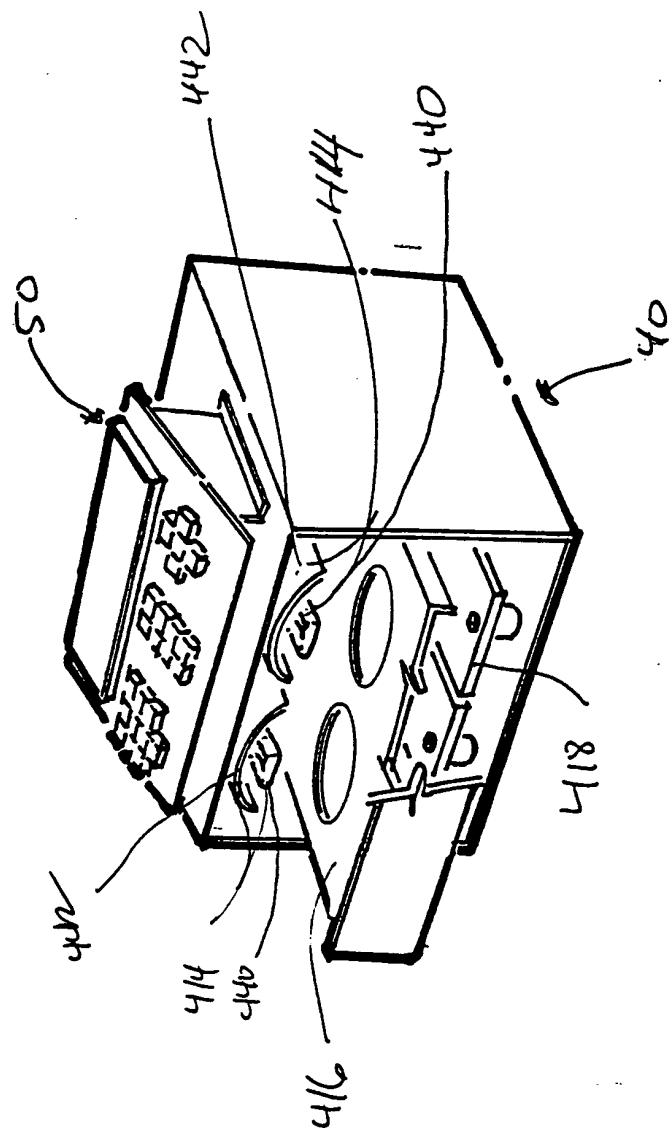


Fig. 12

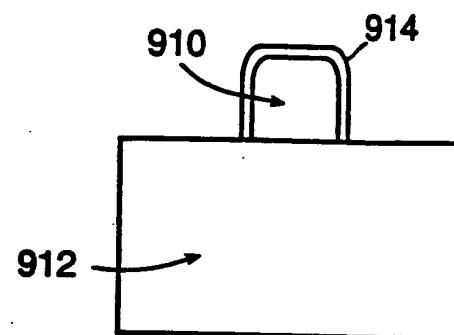


FIG. 13

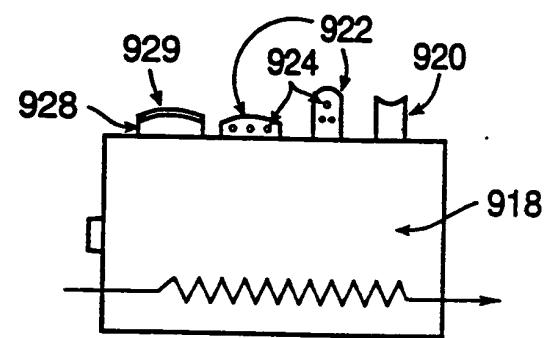


FIG. 14

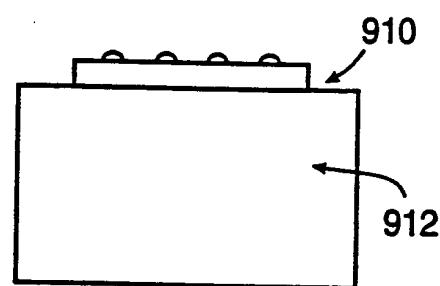


FIG. 15

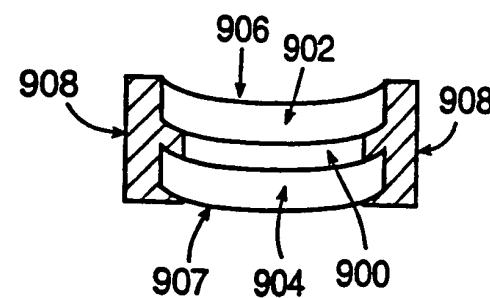
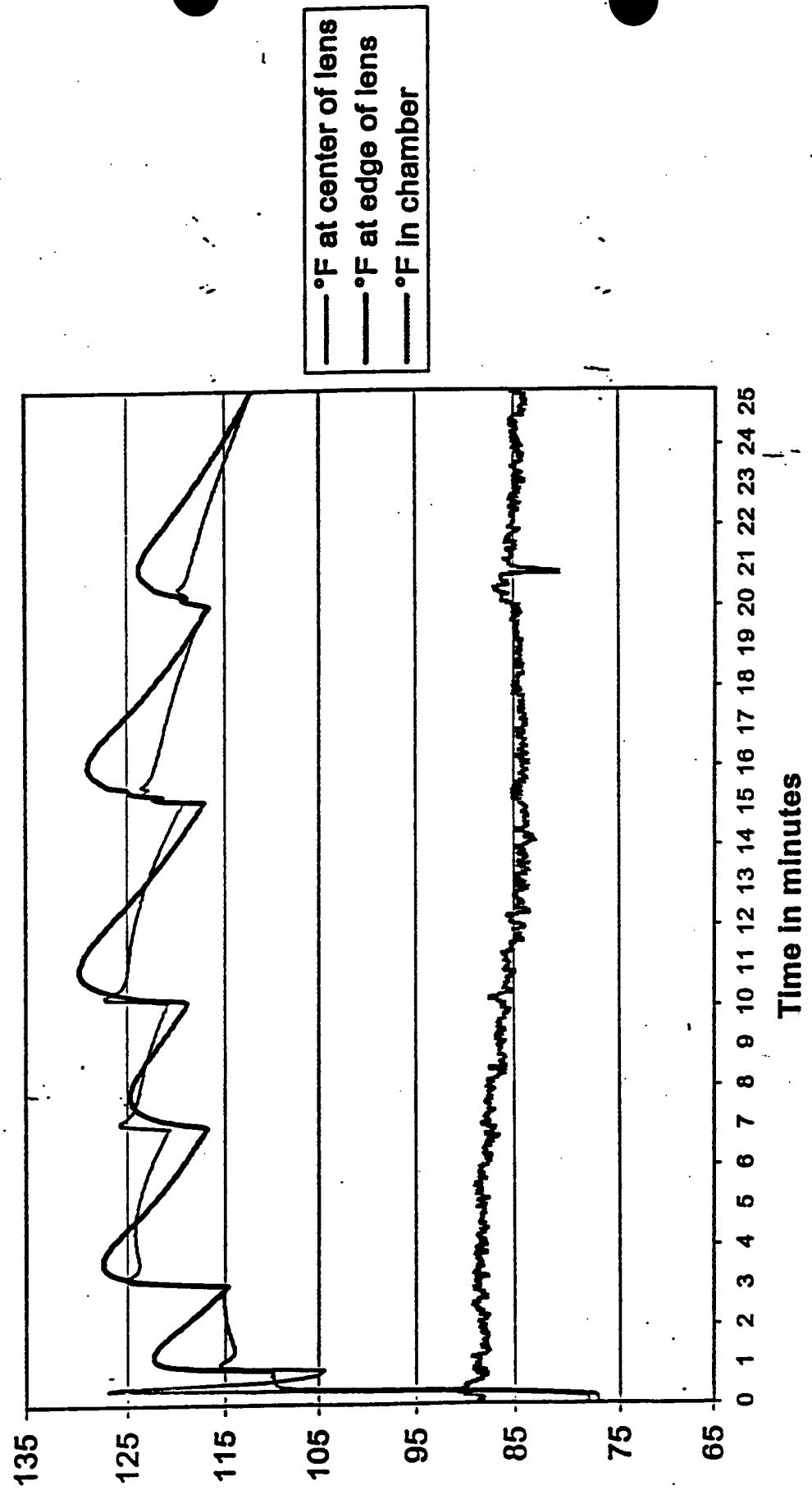


FIG. 16

100 90 80 70 60 50

Fig. 17



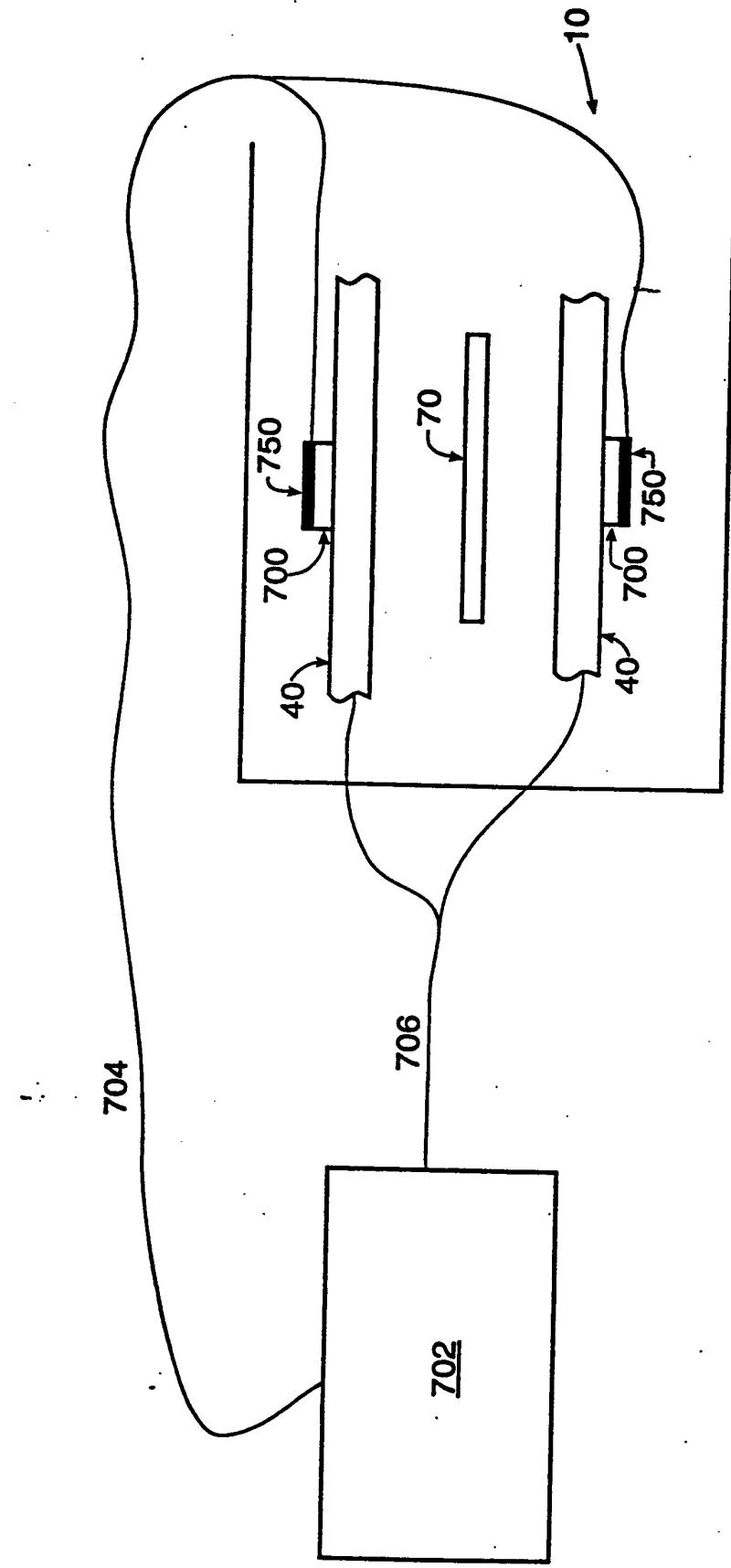
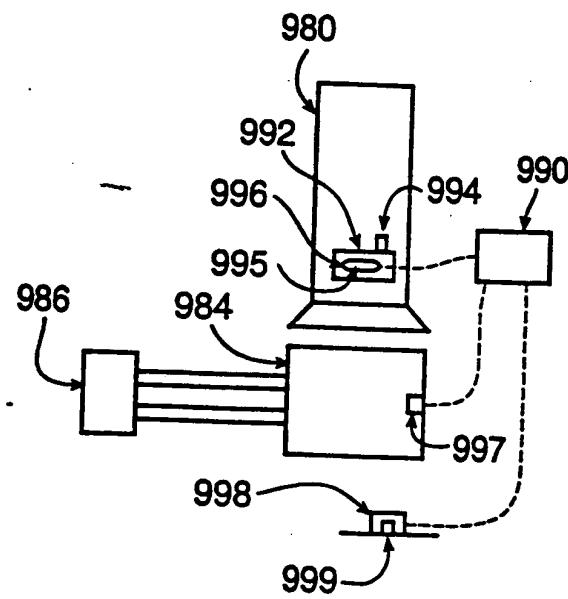
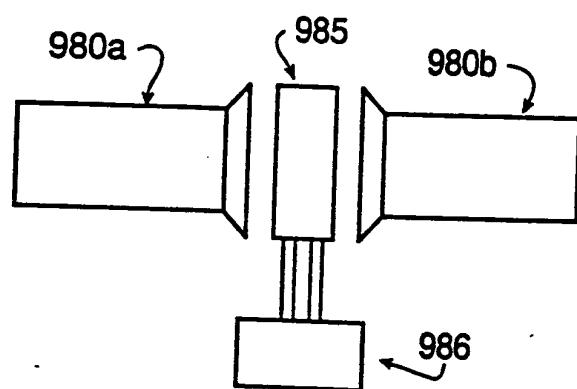
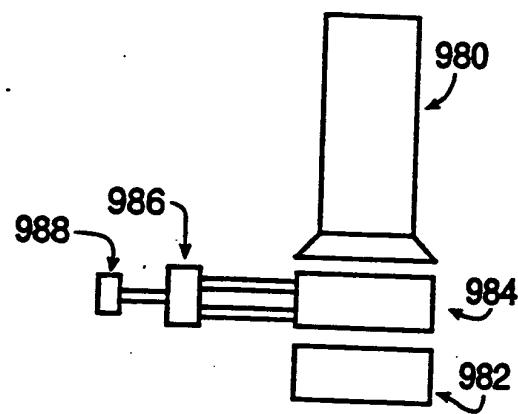


FIG. 18



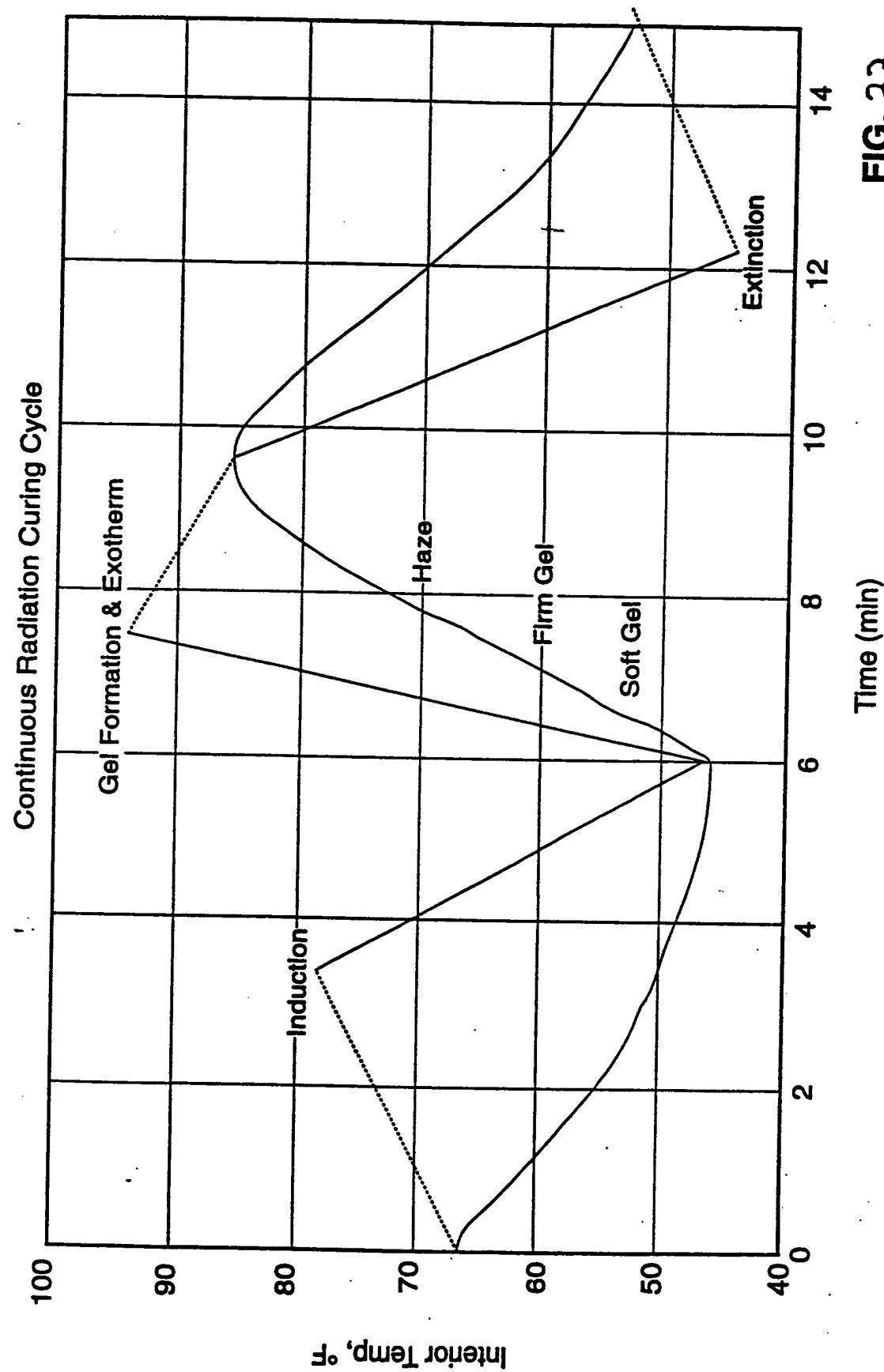


FIG. 22

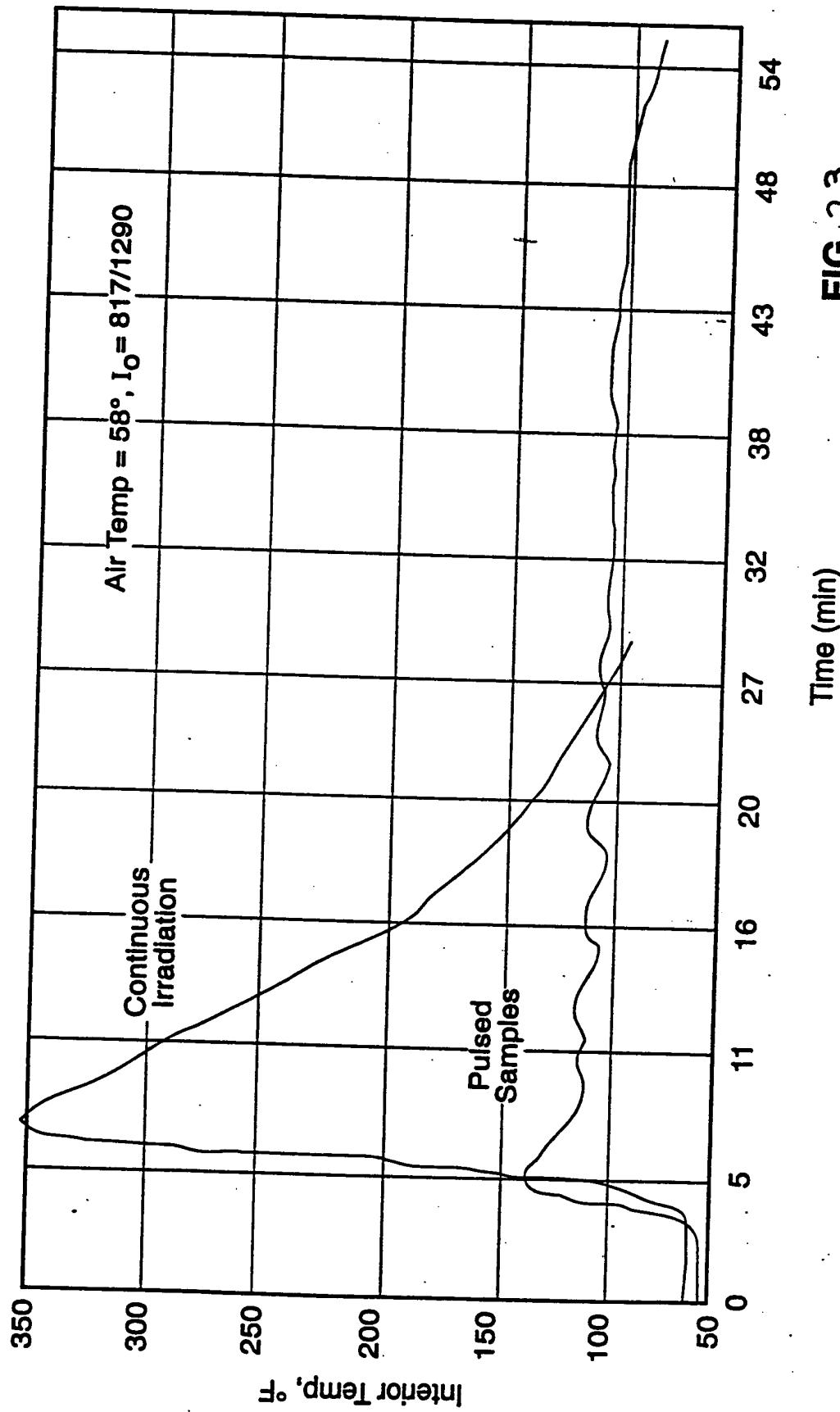


FIG. 23

The effect that this variable will tend to have:

MASS OF SAMPLE

Interaction of Pulsed Method Variables

FIG. 2.4

On this cycle variable in:	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
OPTIMAL INITIAL EXPOSURE TIME	As sample mass increases, initial exposure time may be increased. The mass of the sample interacts with light intensity to determine a preferred initial exposure time.	As light intensity increases, initial exposure time may tend to decrease. The light intensity level may be controlled for a fixed curing cycle and initial exposure time. It is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	Differences in Inhibitor & Initiator levels between batches of otherwise identical monomers may significantly affect induction periods. Various radiation curable compounds may also vary widely in their preferred initial exposure times due to inherent differences in their reactivity.
TOTAL CYCLE TIME	Increased sample mass may require increased total cycle time to dissipate the additional heat generated.	Increased rates of heat removal may allow for a reduction in the time between pulses and thus total cycle time.	A significant effect that various monomers may have upon total cycle time will come from their different preferred initial exposure times.
TIMING BETWEEN PULSES	Increased sample mass may require longer periods of cooling between pulses of light. More heat tends to be generated from each pulse for larger samples, thus requiring longer time periods to remove heat.	Increased rates of heat removal tend to allow for a reduction in the time between pulses.	The duration of the pulses may be adjusted to create the desired amount of reaction and heat generation for the particular lens forming material being cured. Adjusting the cooling period between pulses may also be beneficial.

The effect that this variable will tend to have:

MASS OF SAMPLE	LIGHT INTENSITY	RATE OF COOLING	IDENTITY OF MONOMER
On this cycle variable in: TOTAL EXPOSURE TIME	Increased sample mass tends to require both increased initial exposure time and a greater number of pulse/cooling cycles.	There is only a small relationship between the total dosage of light a particular mass sample requires to polymerize and the rate at which it is being cooled. Increased exposure time, it is believed, however, that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	A significant effect that monomer identity may have on total cycle time may be contributed by differences in the preferred initial exposure period. Various lens forming materials may also require longer/shorter duration pulses depending upon their reactivity.
DURATION OF PULSES	The length of the pulses during each phase of the curing cycle may be adjusted for different mass samples. The time between pulses may be increased /decreased according to mass.	The duration of the pulses may be varied in inverse proportion with the light intensity selected. It is believed, however that changes in light intensities may have little impact above a certain light "saturation" point for the sample.	Various lens forming materials require different pulse duration depending upon their reactivity. For a selected material, slight differences in initiator & inhibitor levels will not tend to affect pulse duration.

Interaction of Pulsed Method Variables (continued)

FIG. 24
(continued)

FIG. 25

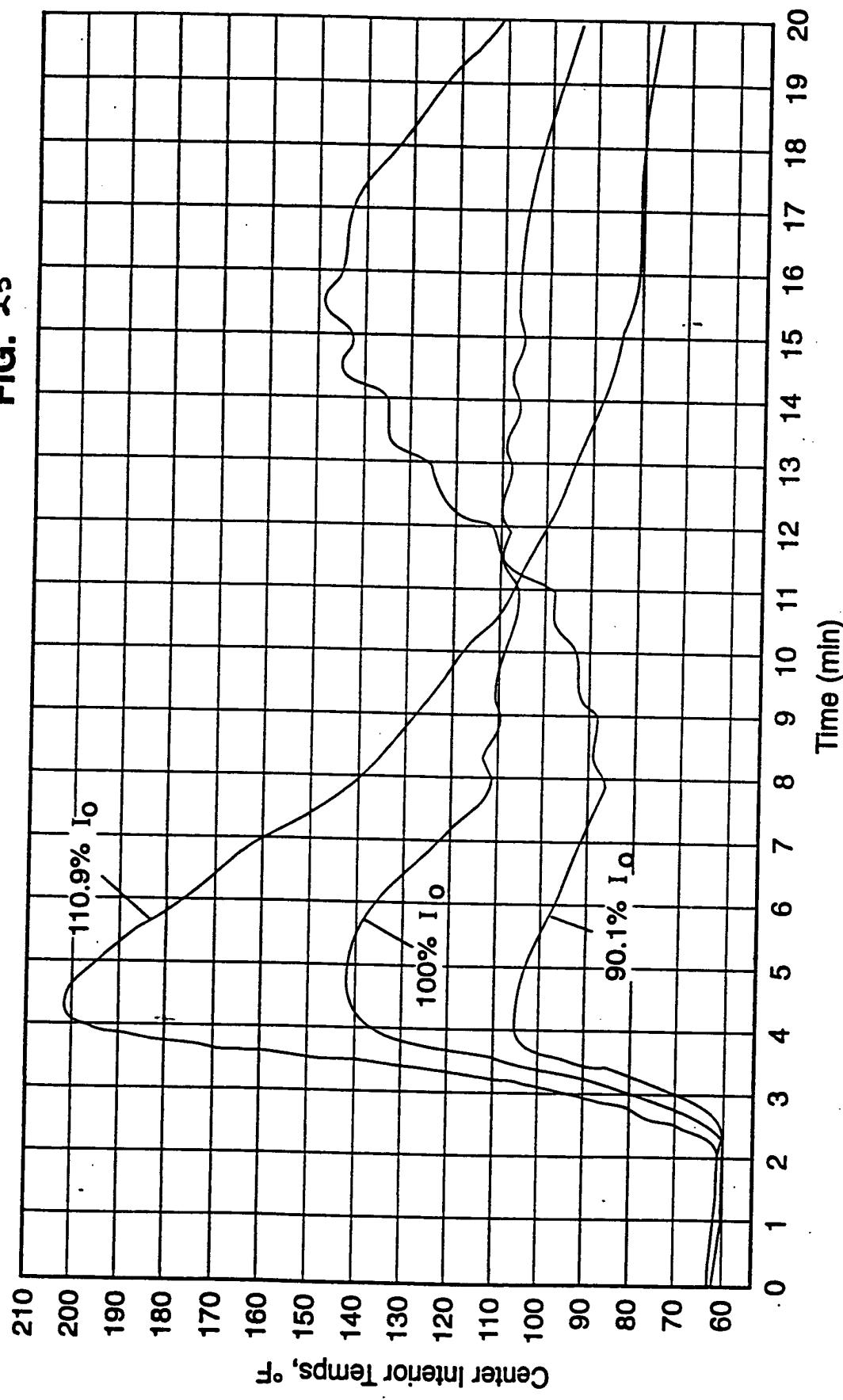


FIG. 26

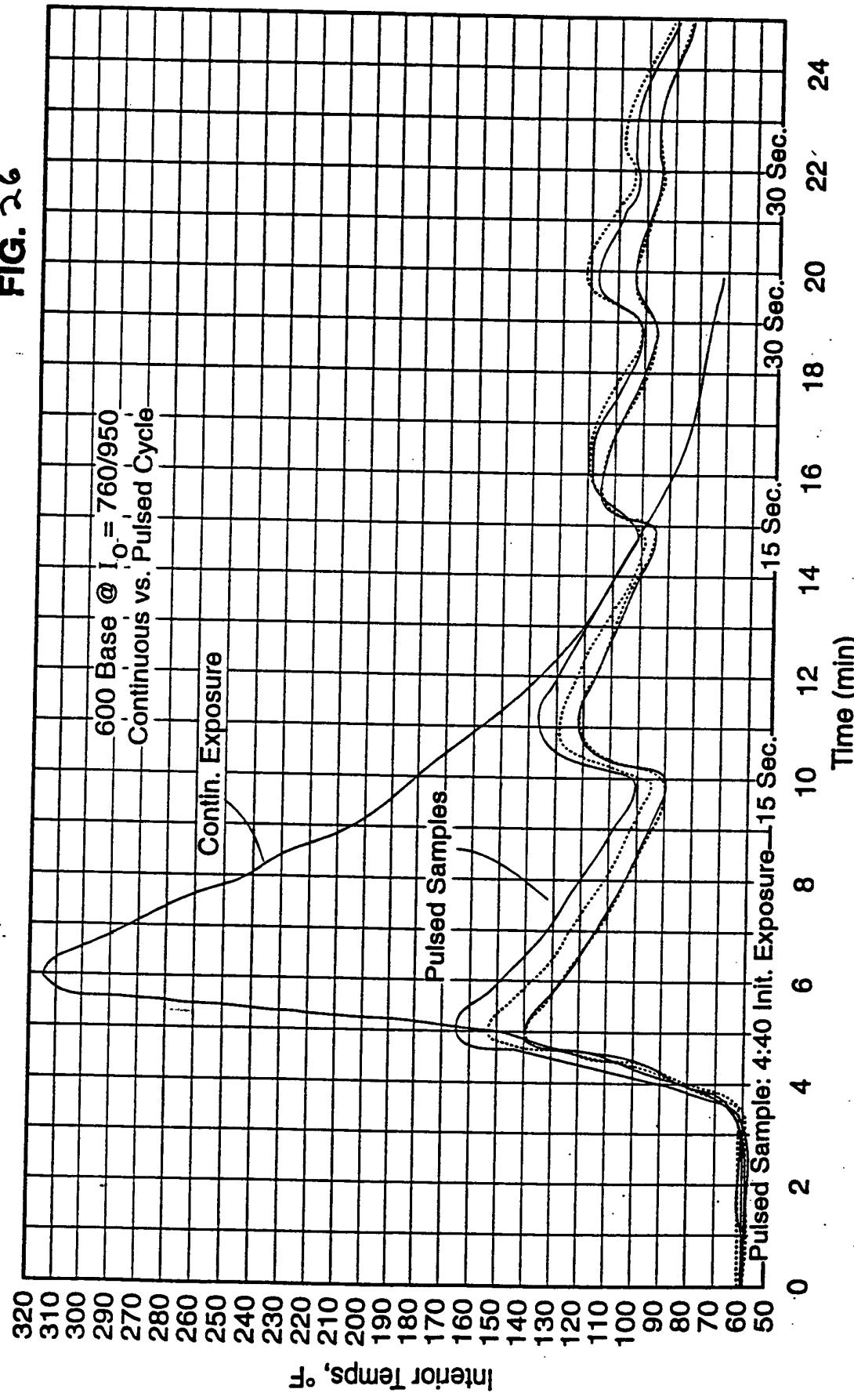


FIG. 27

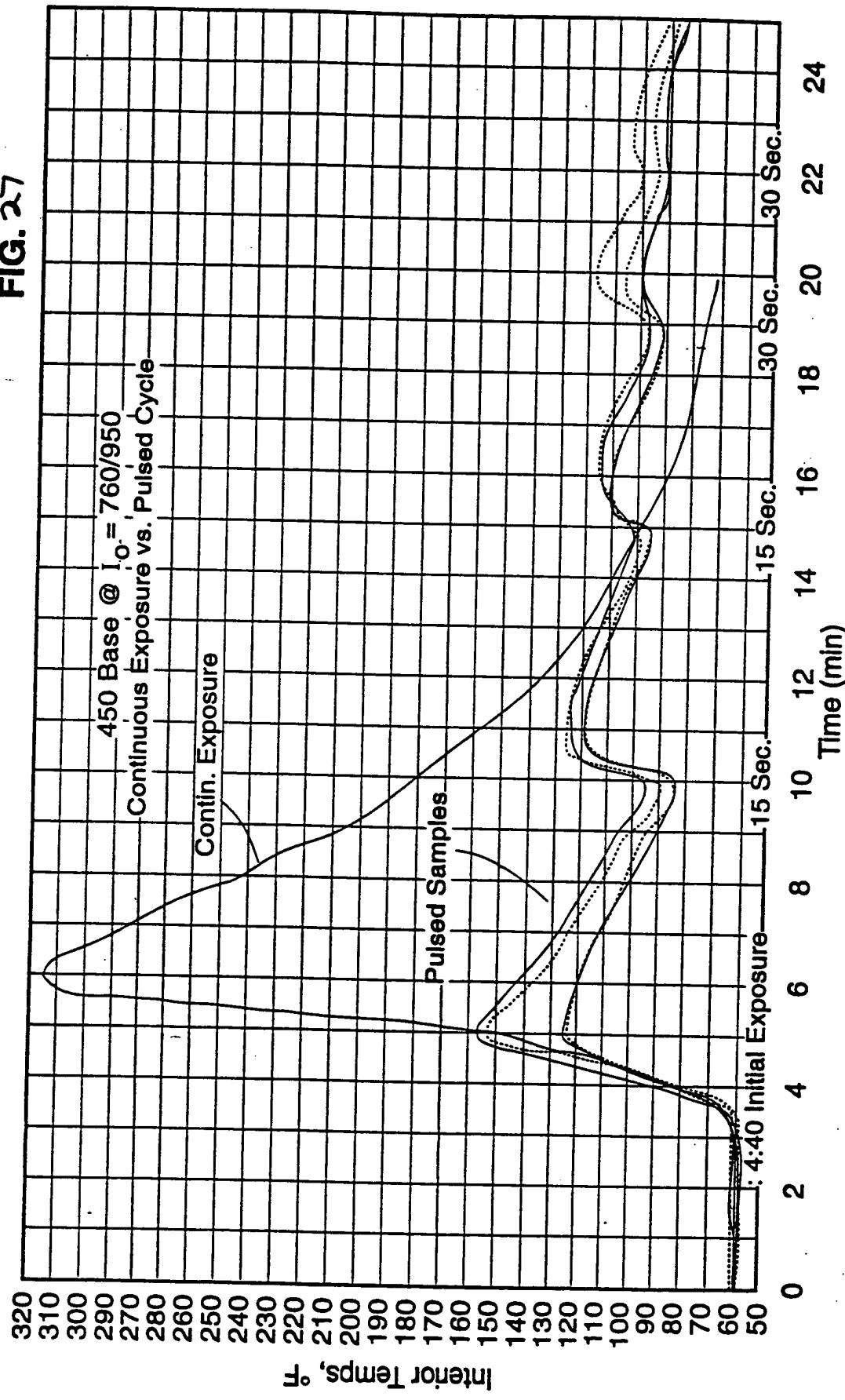


FIG. 2.8

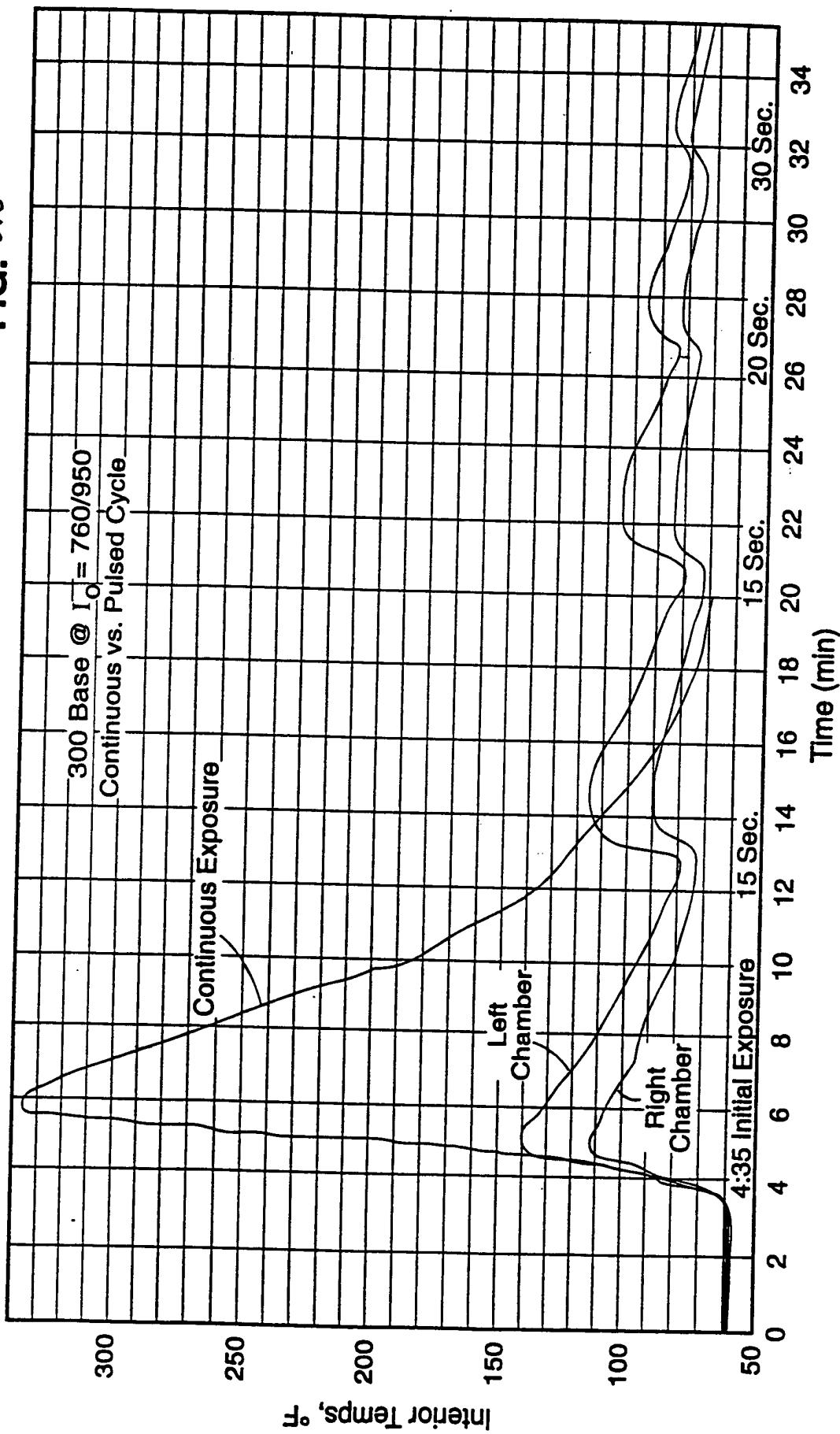
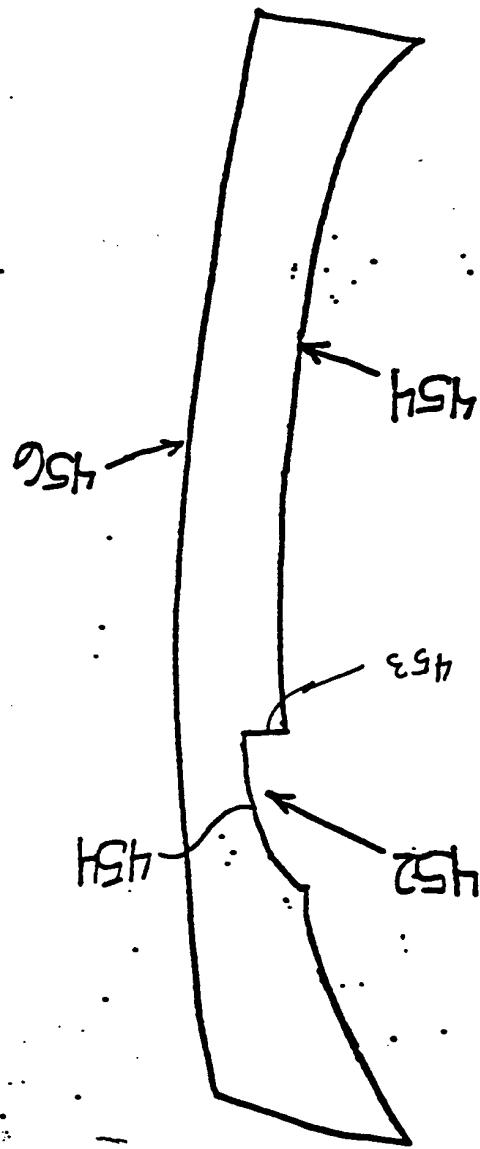


FIG. 29



250 300 350 400 450 500 550 600 650 700 750 800 850 900

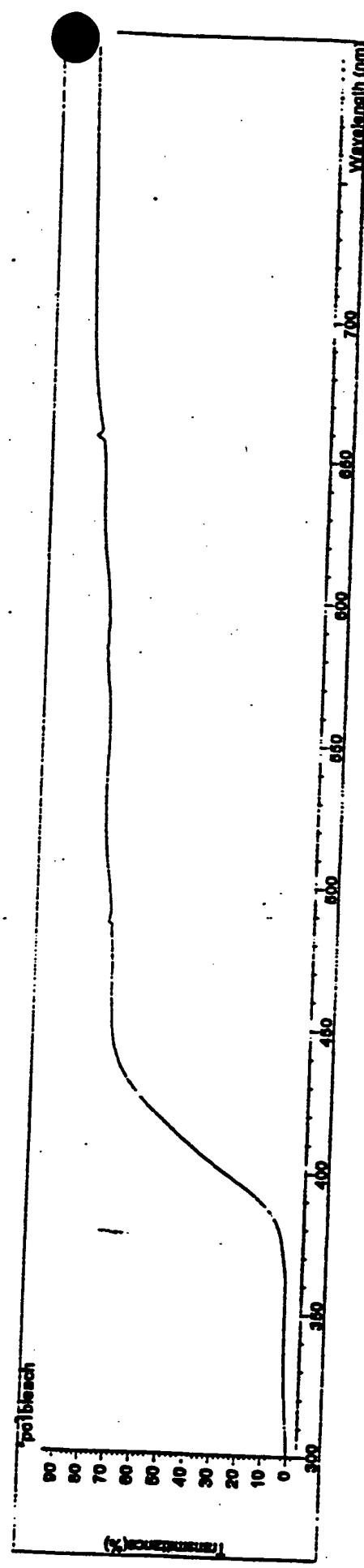


FIG. 30

100 90 80 70 60 50 40 30 20 10 0

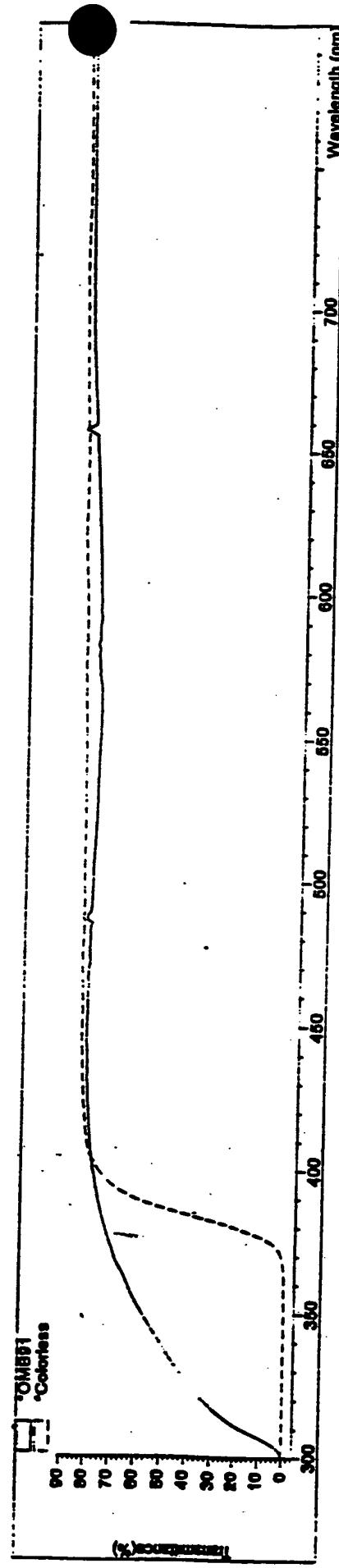


FIG. 31

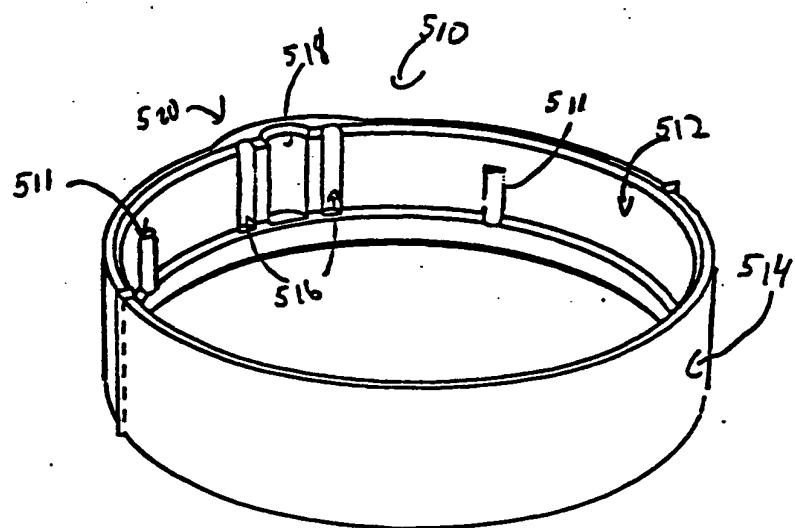


Fig. 32

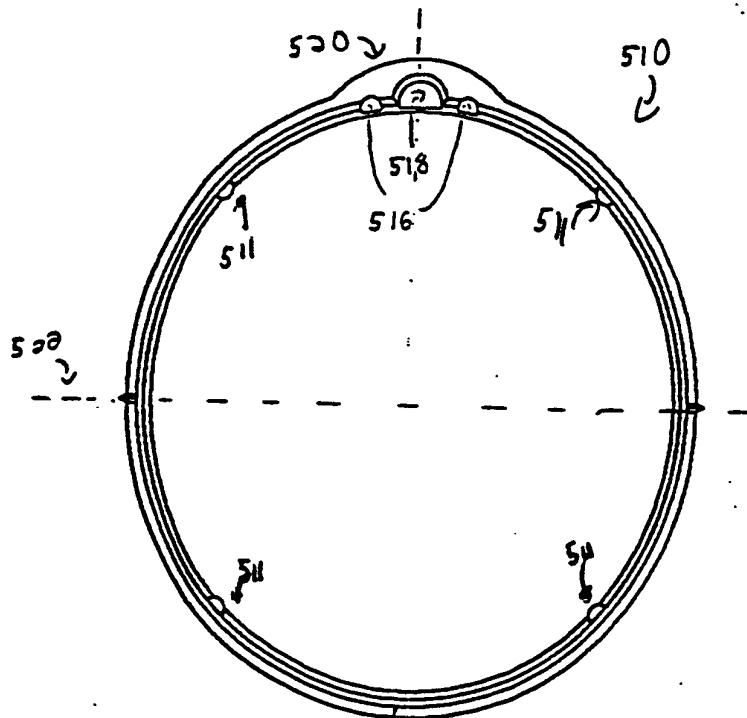


Fig. 33

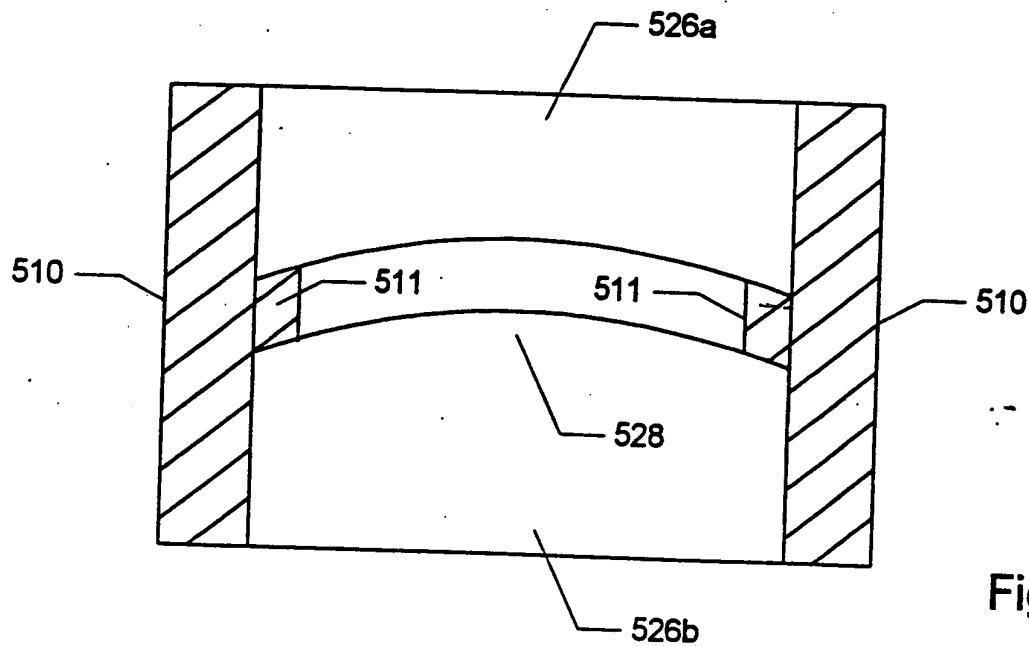


Fig. 34

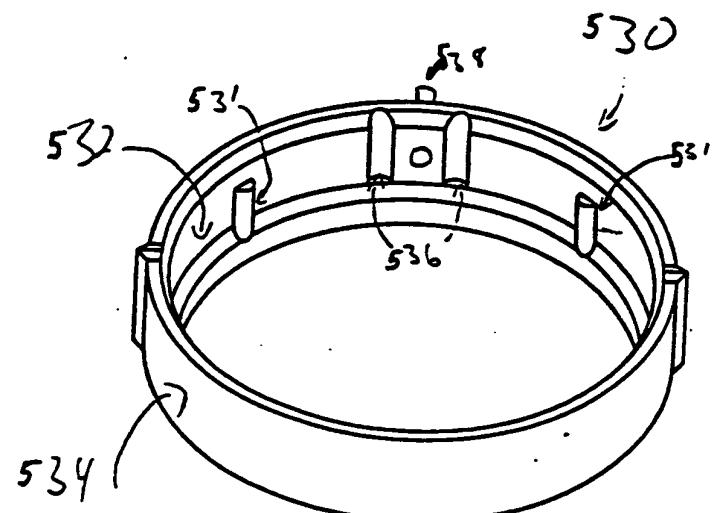


Fig. 35

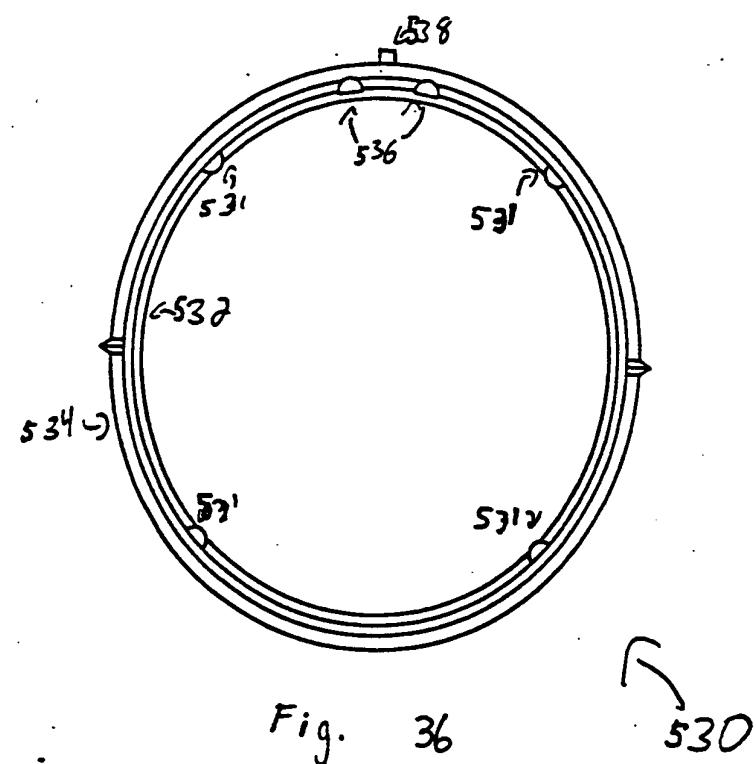


Fig. 36

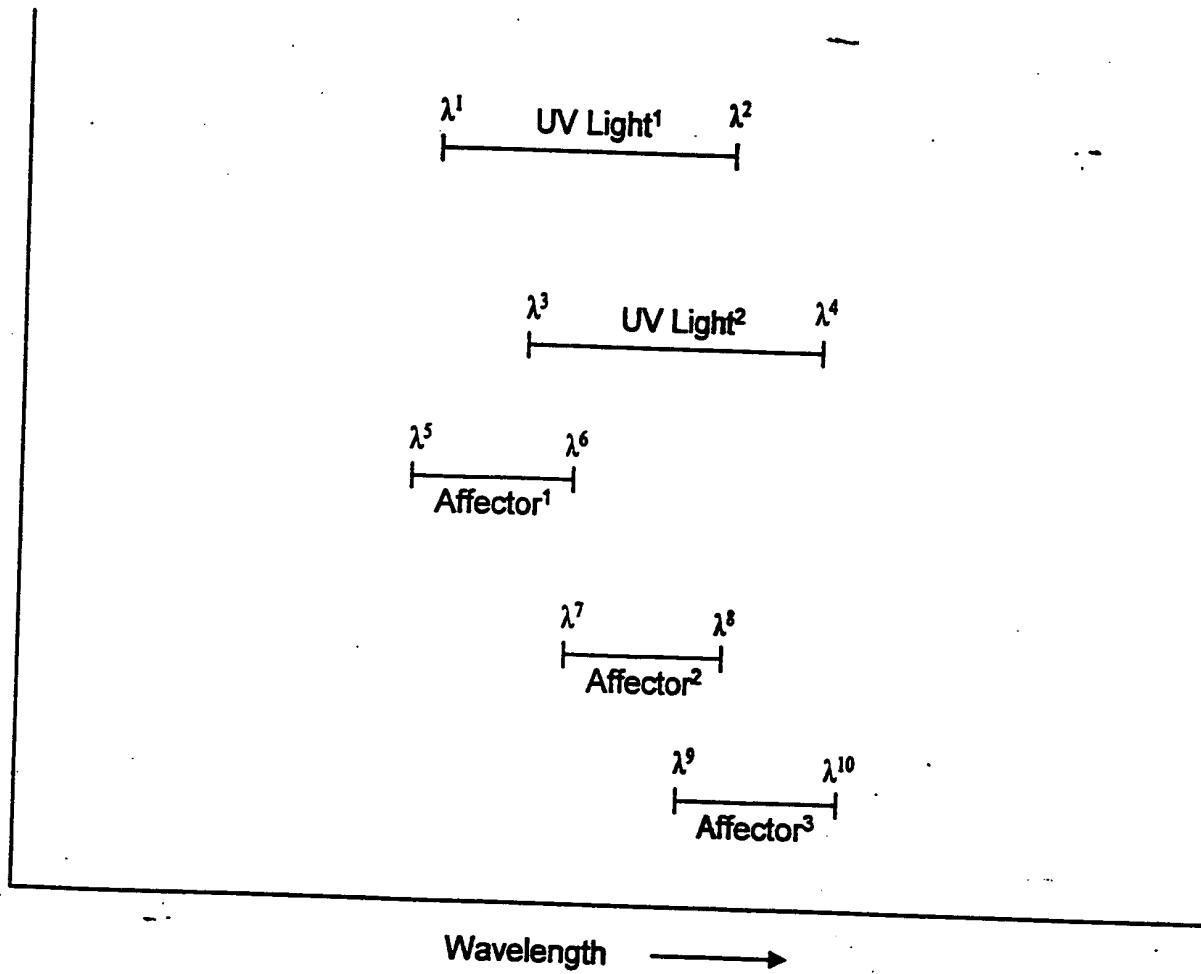


FIG. 37

00000000000000000000000000000000

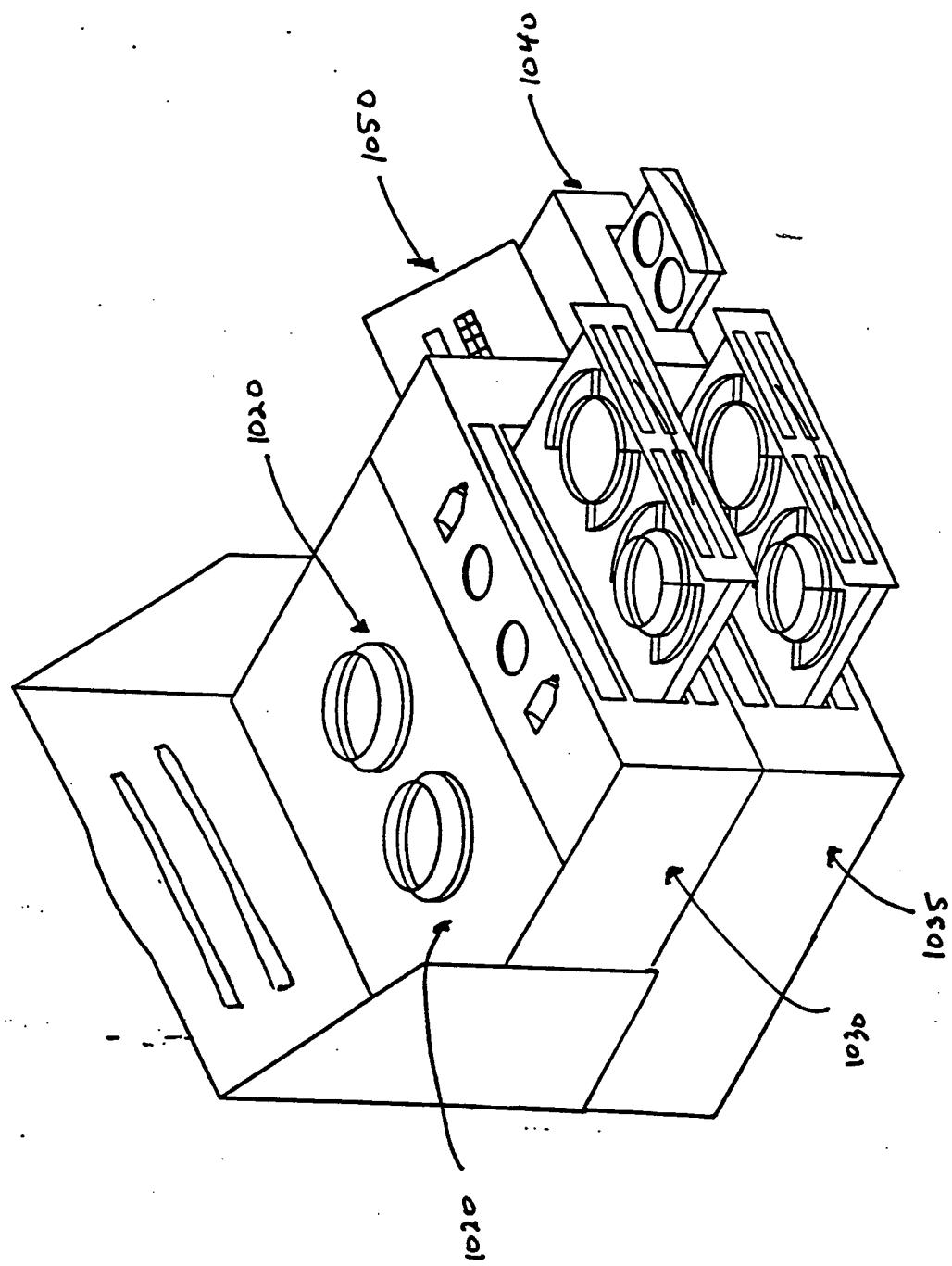
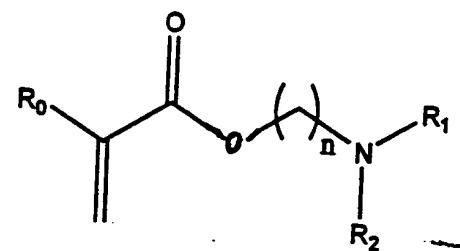
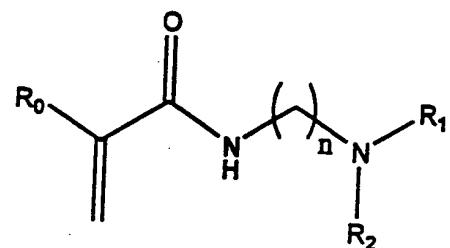


FIG. 38

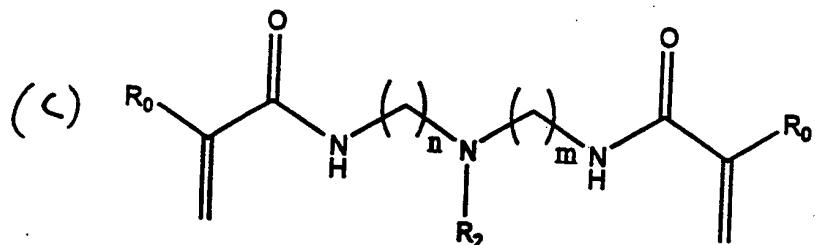
(A)



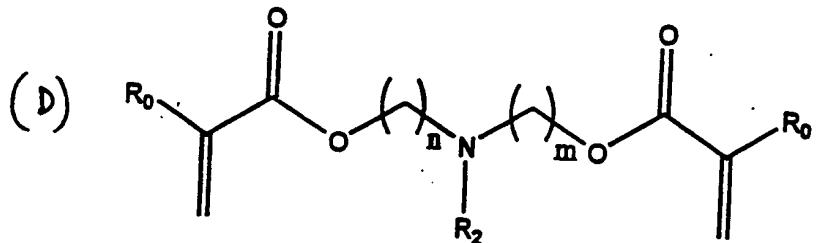
(B)



(C)



(D)



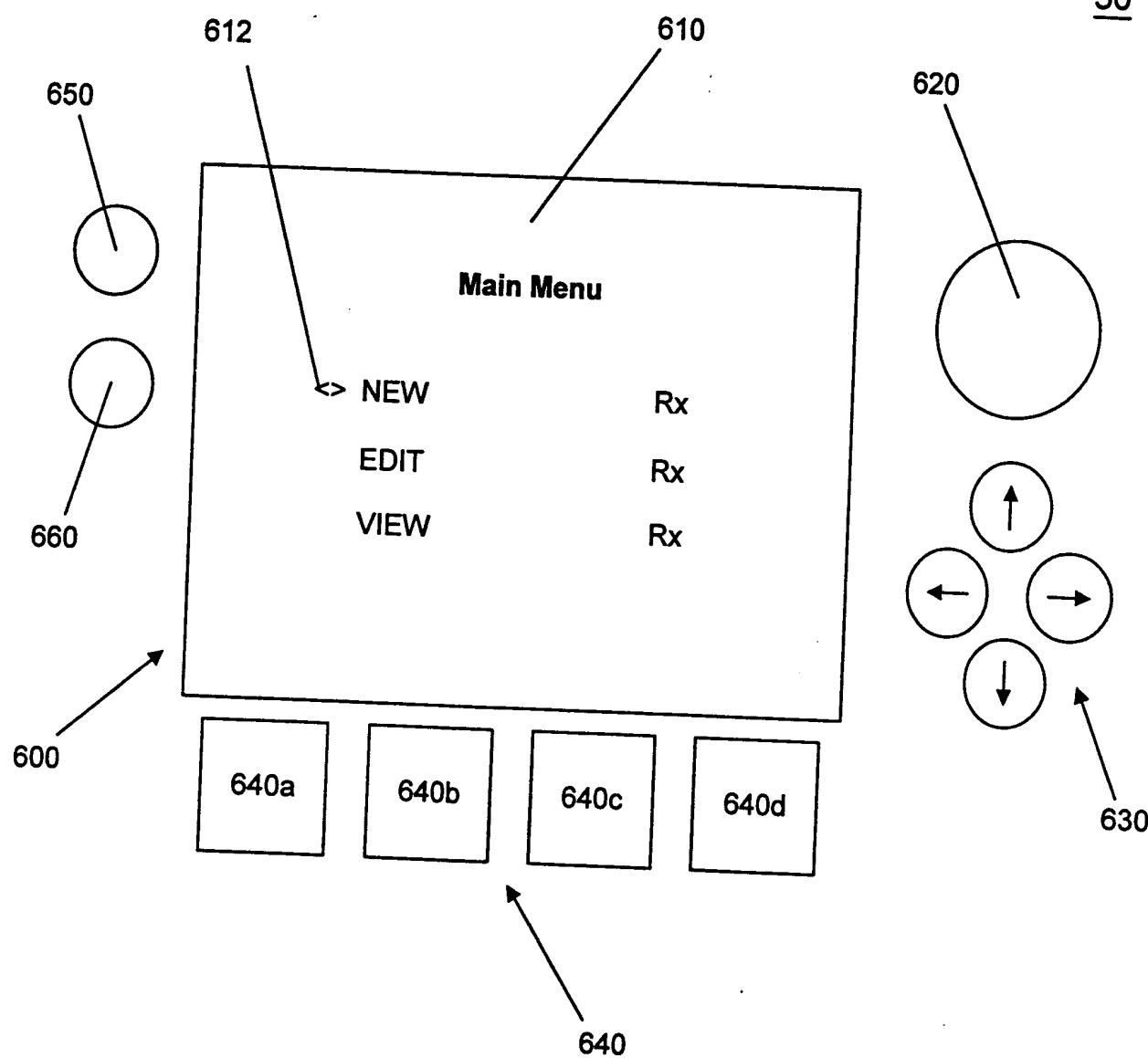


FIG. 40

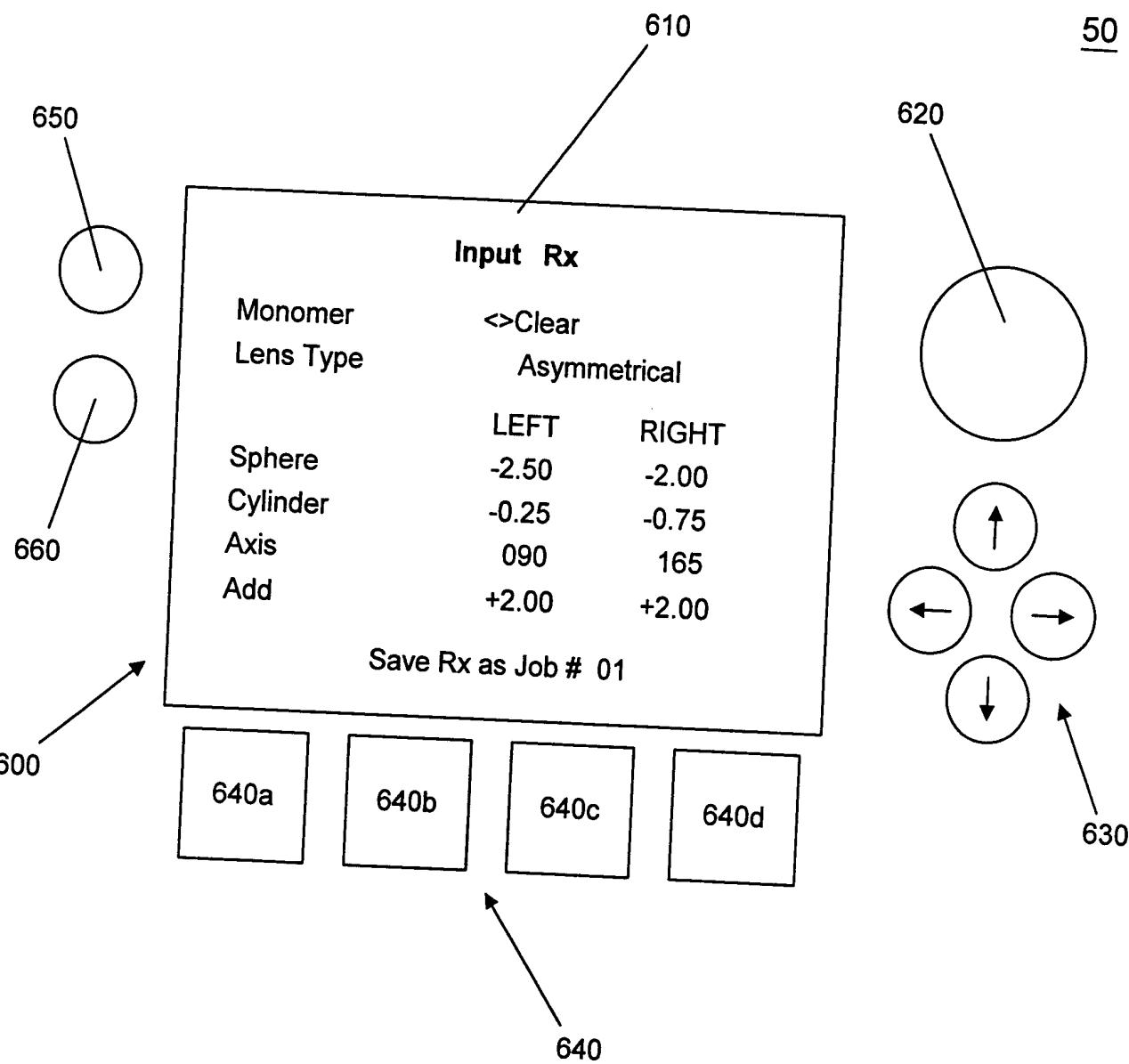


FIG. 41

50

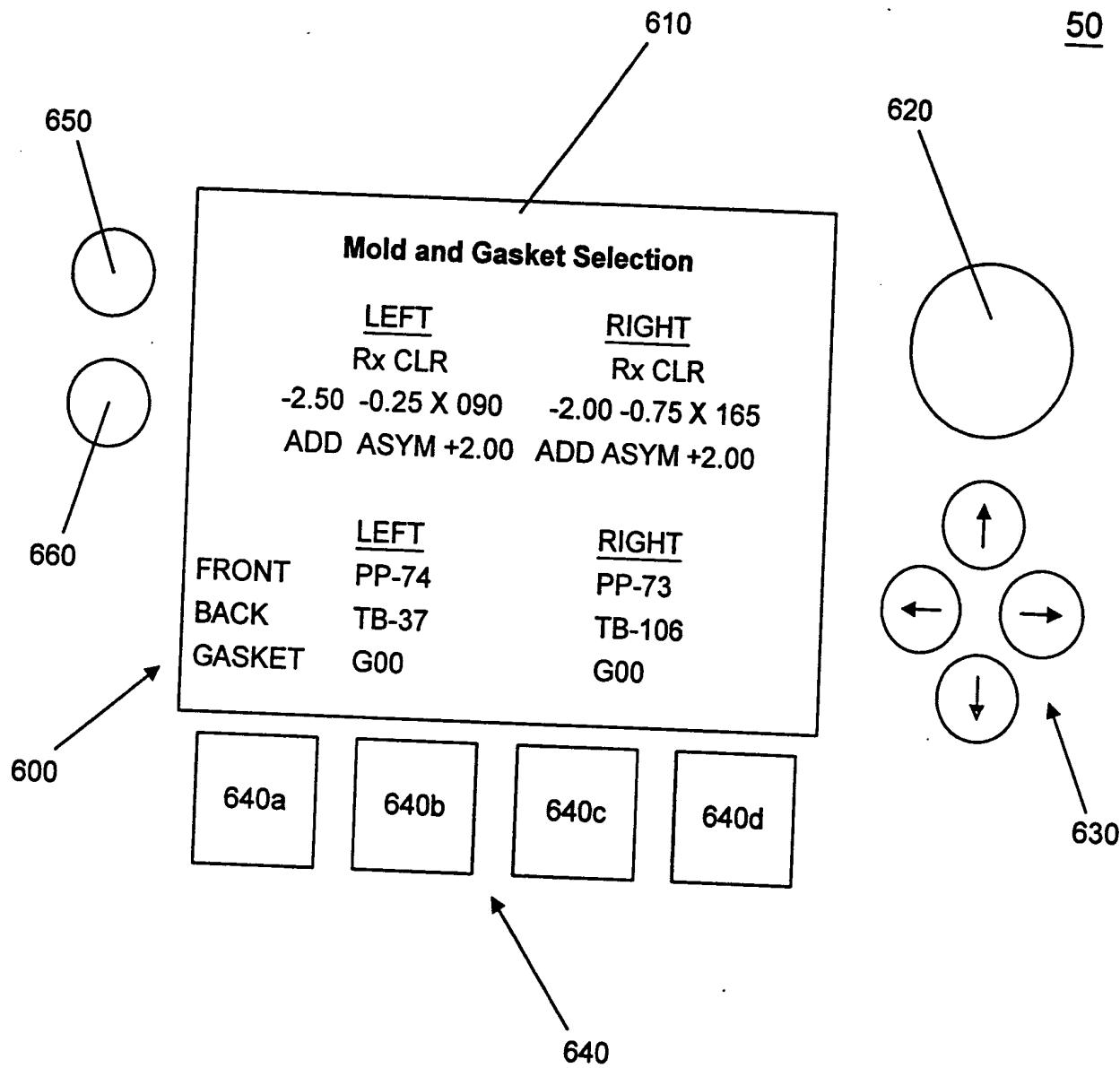


FIG. 42

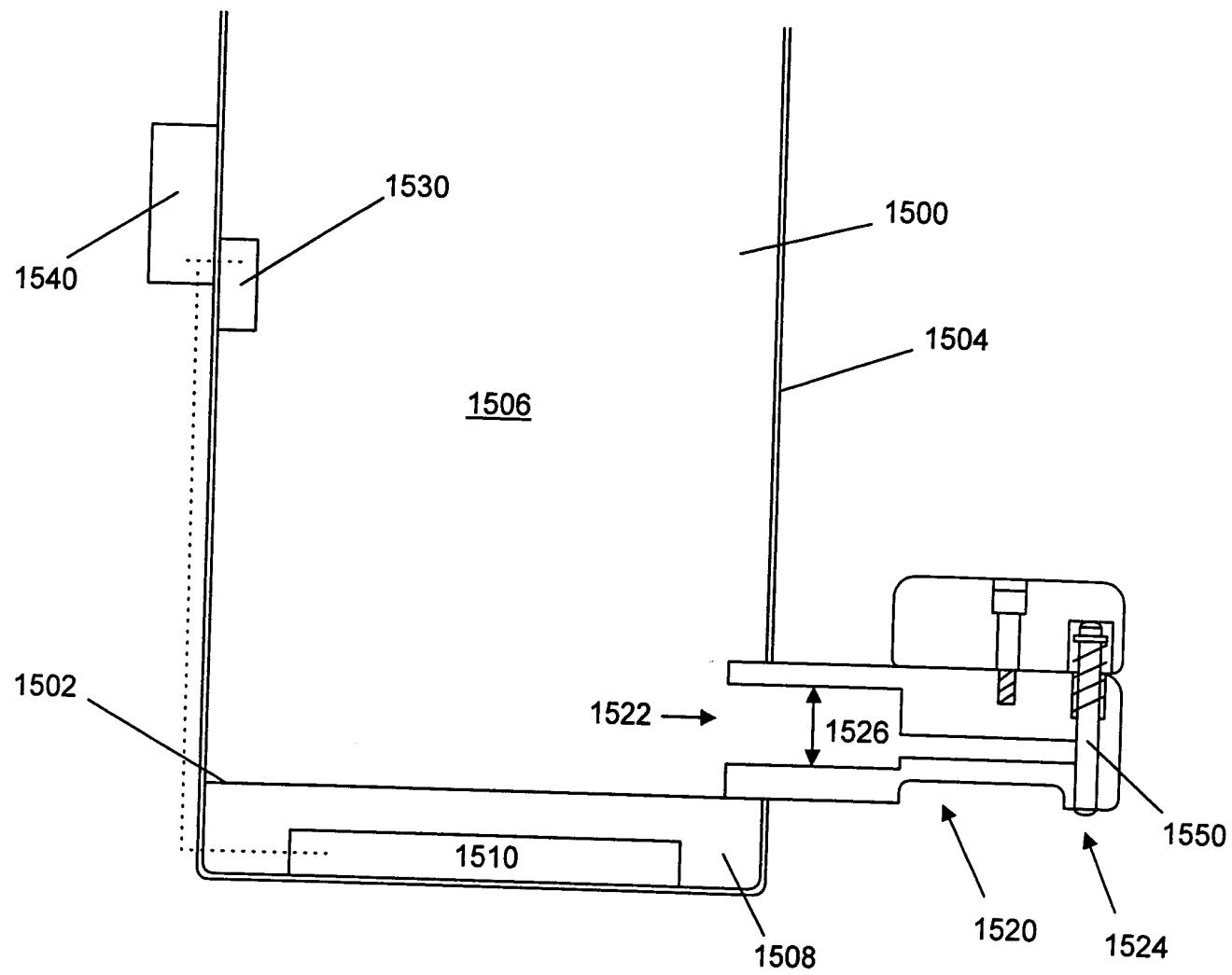


FIG. 43

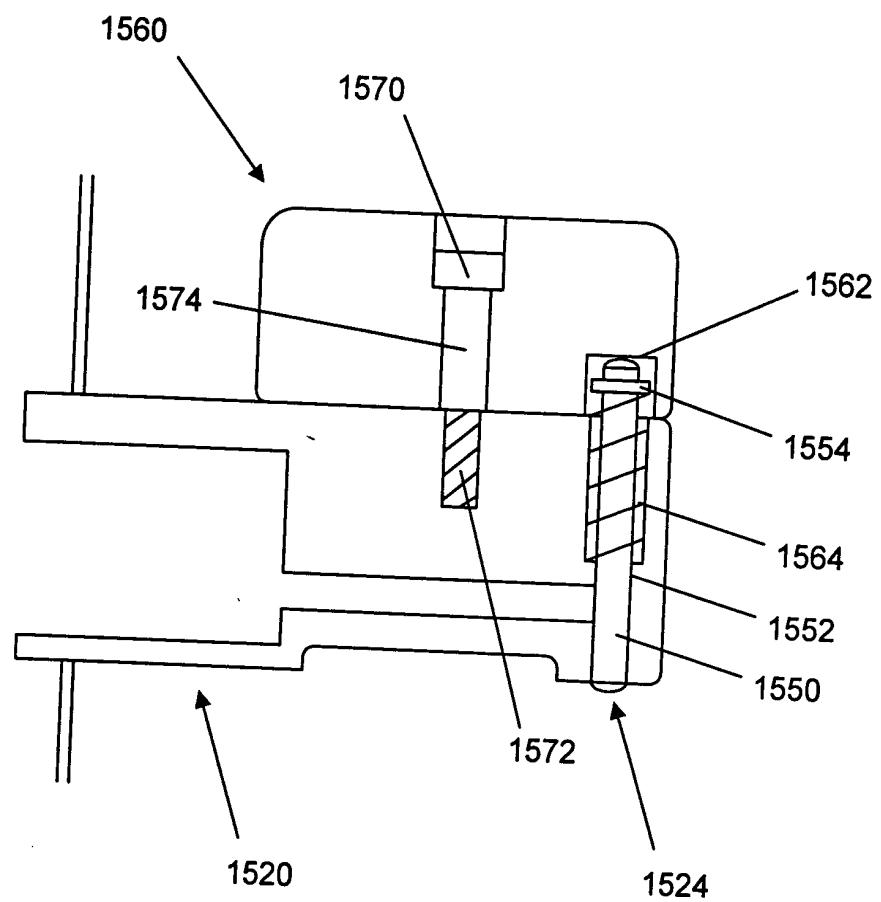


FIG. 44

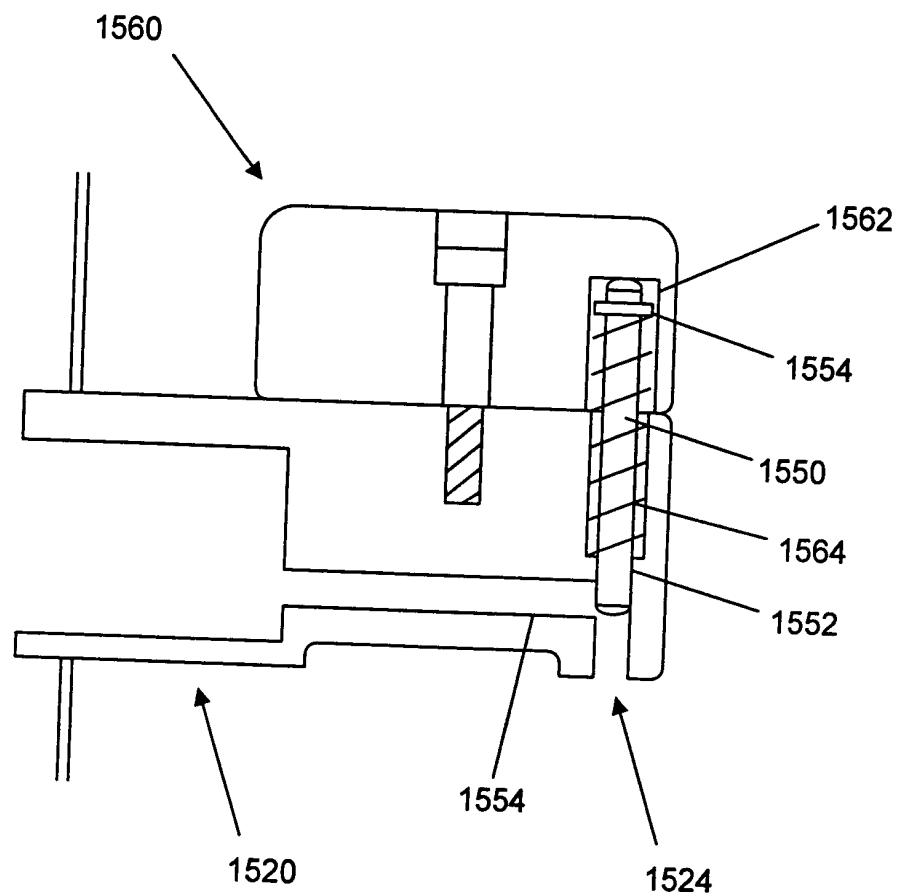


FIG. 45

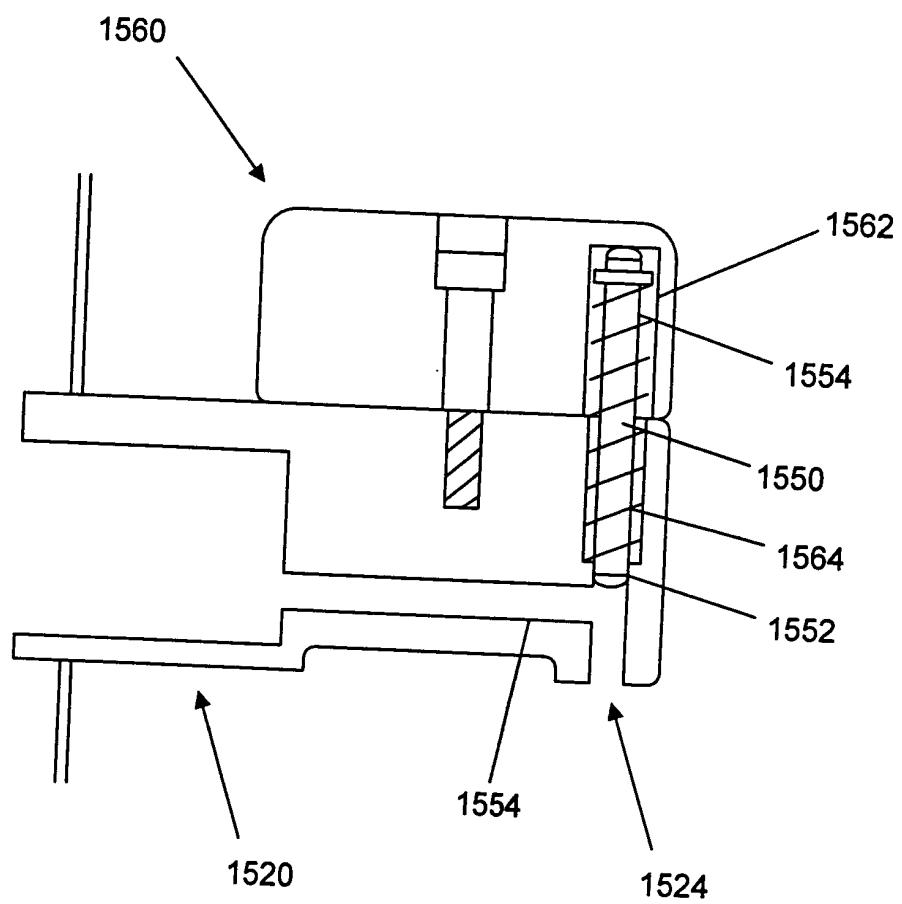


FIG. 46

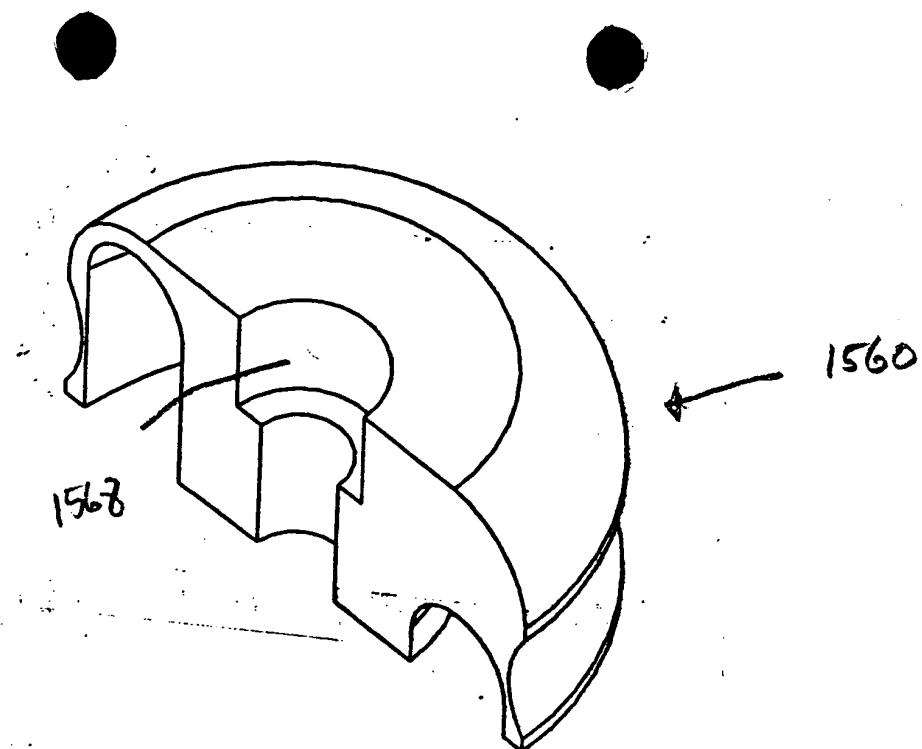


FIG. 47

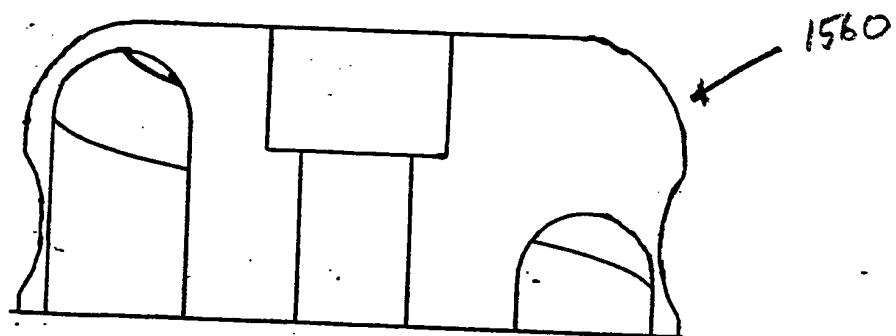


FIG. 48

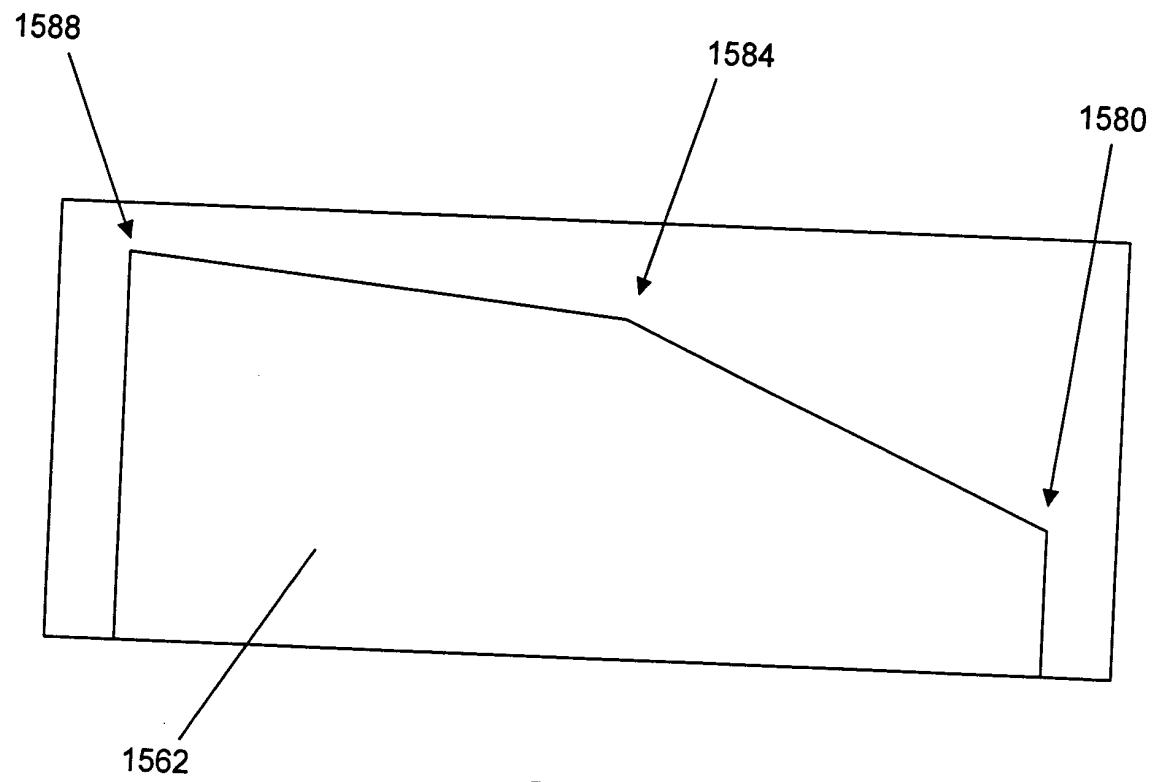


FIG. 49

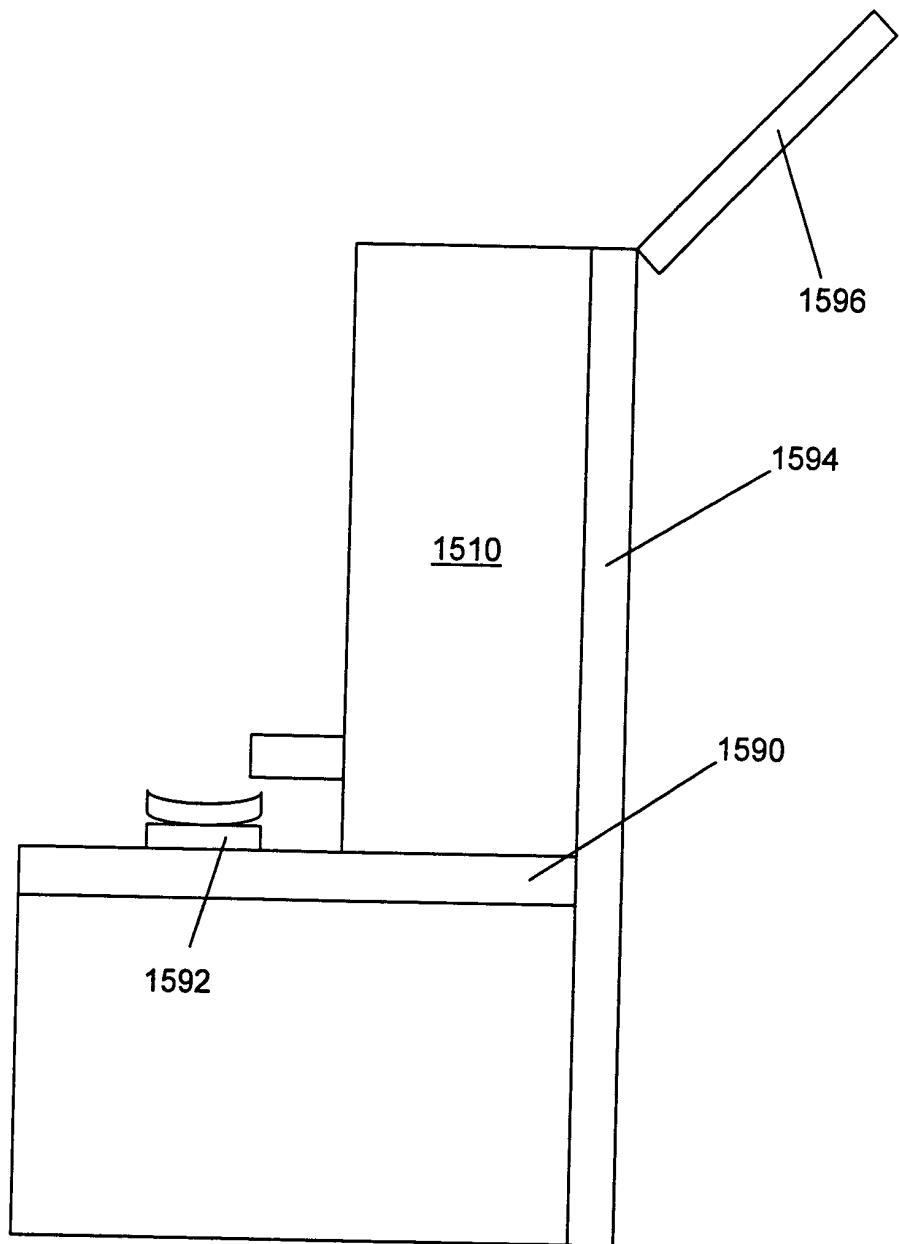
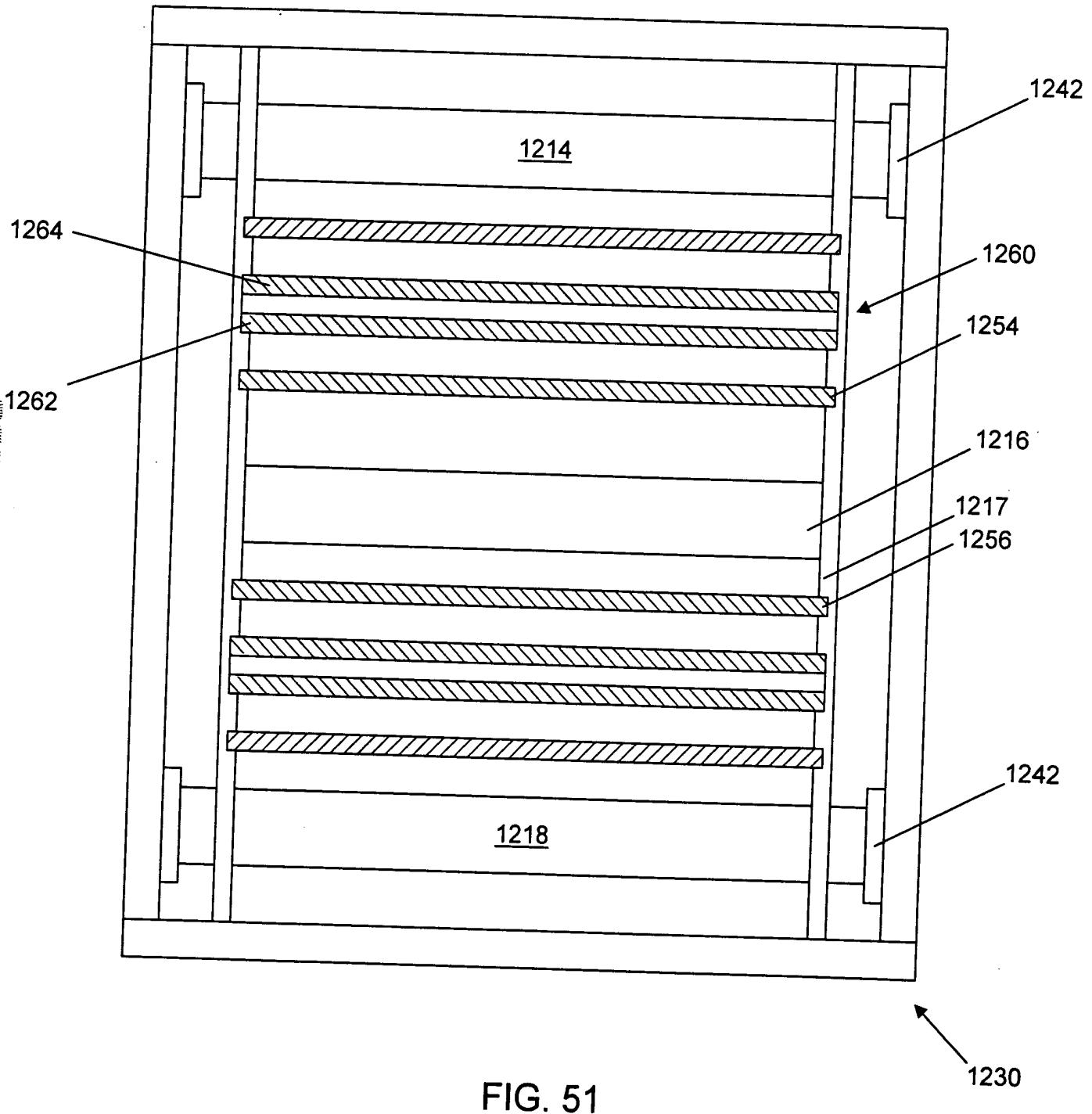


FIG. 50



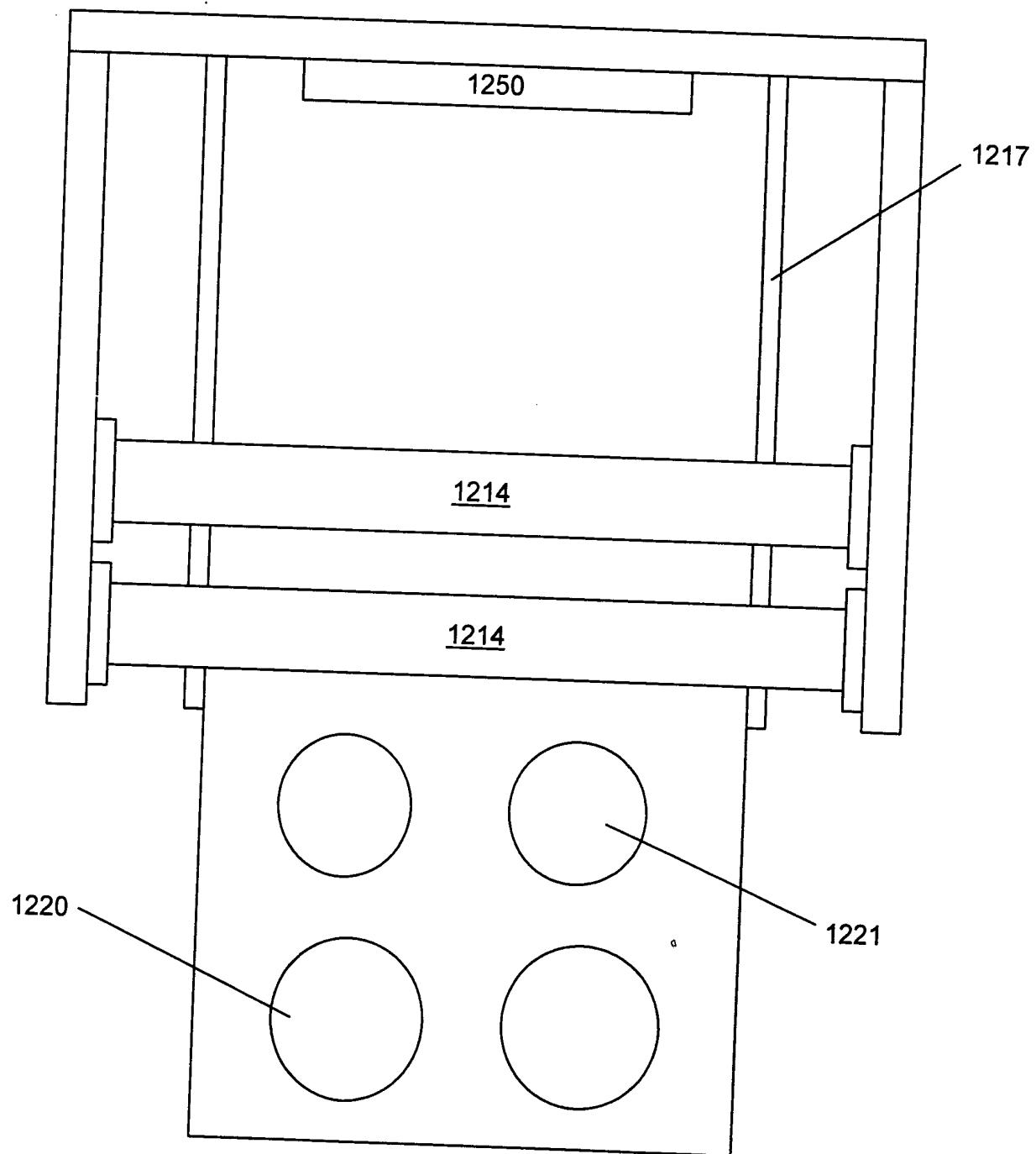


FIG. 52

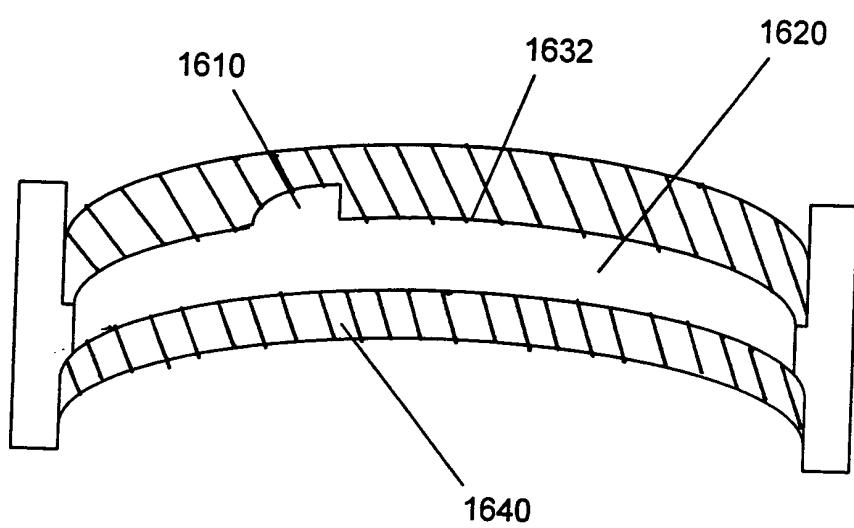


FIG. 53